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ROYAL MEEKER, Commissioner

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MONTHLY LABOR REVIEW

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Minimum Quantity Budget Necessary to Maintain a Worker's Family of Five in Health and Decency.

THE Bureau of Labor Statistics prepared primarily for the use of the Congressional Commission on Reclassification a tentative quantity and cost budget necessary to maintain a family of five in health and decency in Washington, D.C.[1] It is even more important to establish a quantity budget for the workingman's family than for the clerical family. Such a quantity budget is needed for the more accurate determination of the cost of maintaining a workingman's family in health and decency, and also for the more accurate calculation of changes in the cost of living. This tentative quantity budget for a worker's family constitutes the bureau's best estimate at this time of what should be included in the family budget of the workingman. The bureau was assisted in compiling this budget by the Committee to Study the Relationship of Standards of Living to Health, of the National Conference on Social Work, and especially by Miss Caroline L. Hunt, Office of Home Economics, United States Department of Agriculture.

Food.

IN THE determination of a proper family dietary there are two standards which must be assumed at the beginning: (1) A standard food requirement in calories per man per day; (2) a standard table giving the food-consuming capacity of women and children in terms of a common unit—the equivalent adult male.

It has been estimated that the number of calories needed by a man at moderately hard muscular work is 3,000 to 3,200 per day. About 10 per cent of the calorie value of food is wasted in preparation, cooking, etc., and also a small per cent of the food which enters the mouth is not digested or assimilated. Therefore, 3,500 calories purchased represents approximately 3,000 to 3,200 calories actually consumed. Experience indicates that it is necessary to purchase this amount of food per man per day in order to insure sufficient variety and quantity, both as to bulk and calorie content. If the housewife is a dietetic genius, 3,500 calories per man per day purchased in the market may be a liberal allowance.

The relative proportions of the food consumed by the husband, wife, and children have been determined approximately by laboratory experiments and by estimates taking into account the factors of age, sex, weight, occupation, and activity. A scale showing relative amounts of food consumed by men and women at different kinds of

[1] This budget was presented by Commissioner Royal Meeker as a progress report of the Committee to study the relationship of Standards of Living to Health at the annual meeting of the National Conference of Social Work, Apri, 21, 1920. It was also the basis of that portion of his address dealing with cost of living which he delivered before the Group Living Conference at Lake Placid, N. Y., May 29, 1920.

work, such as hard muscular work, moderately active muscular work, light muscular work, and sedentary occupations, and by children of different sexes and ages, is available and could have been used in this instance but for the increased amount of labor which it would have entailed. In studies of such large scope as a country-wide cost-of-living survey, brevity is essential and the following abridged table of equivalent adult males has been found more practical and sufficiently accurate for general purposes and it has, therefore, been adopted for use by the Bureau of Labor Statistics:

Male, 15 years or over	1.00
Female, 15 years or over	.90
Children, 11 to 14 years, inclusive	.90
Children, 7 to 10 years, inclusive	.75
Children, 4 to 6 years, inclusive	.40
Children, under 4 years	.15

The following food budget has been drawn up for a family of five, including husband, wife, and three children—boy, aged 12; girl, 6; and boy, 2. According to the above standard the calorie requirement of a man is taken as 1; that of a woman is 0.9; a boy of 12 years, 0.9; a girl of 6 years, 0.4; and a boy of 2 years, 0.15. The combined food requirements of this family would be equal to that of 3.35 adult males.

The quantity food budget submitted here as representing the food requirements of the standard family of five was obtained by averaging the actual amounts of foods used by 280 families selected from the cost-of-living survey made by the Bureau of Labor Statistics. The families were selected for special food analysis because they averaged in size approximately 3.35 equivalent adult males, and in the neighborhood of 3,500 calories of food purchased per man per day. The food budgets in the Bureau's study were taken in great detail, giving, among other things, the amount of each article of food purchased for a year for each family scheduled. The 280 budgets used in this detailed calorie analysis represented about 25 cases from each of 11 representative cities.

The average food budget obtained from these 280 families was then carefully considered from the standpoint of health. For the most part this average budget contains proteins, fats, and carbohydrates in sufficient quantities and in the right proportions. To make the average food budget acceptable to trained dietitians as a standard food budget, intended to maintain the standard family in health, it was necessary only to reduce slightly the quantity of meat and to increase slightly the quantities of whole milk, fresh vegetables, and fruits.

Quantity of Food for a Family of Five.

The proposed standard food budget submitted herewith, therefore, includes the kinds and, in a large degree, the quantities of food actually consumed by actual workingmen's families. The proposed standard budget has not been worked out by theoretical "experts" in the secrecy of the laboratory. It is made up of things which real people eat day by day throughout the year. It must not be hastily inferred that no improvement can be suggested in the workingman's diet because these workingmen's families ate sufficient food of about the proper kind. Only those families were included

in the special food analysis whose diets measured up to the calorie requirements of sound dietetics. Had the food budgets of all families been averaged together, the showing would have been quite different.

Following is the budget showing yearly quantities in pounds:

ANNUAL QUANTITY OF FOOD FOR A FAMILY OF FIVE, INCLUDING HUSBAND, WIFE, AND THREE CHILDREN (BOY AGED 12, GIRL 6, AND BOY 2).

Item.	Pounds.
Meat:	
Beef, fresh, steak	75
roast	63
stew	47
Beef, salt, corned	10
dried	1
Veal, fresh, cutlet	13
roast	
stew	
Pork, fresh, chops	30
roast	
salt, bacon	19
ham and shoulder	18
side, dry	7
pickled	2
Mutton, chops	26
roast	
stew	
Poultry, hens	23
Sausage	16
Liver	10
Cooked meat, ham	8
bologna	10
corned beef	
Fish:	
Fish, fresh	41
salt	5
canned salmon	10
canned tuna	2
Oysters	5
Other sea food	6
Dairy products:	
Milk, whole	1,602
condensed, evaporated	65
Cream	3
Ice cream	8
Butter	80
Cheese, American	14
cottage	6
Fats, mixed fats, vegetable oil, etc.:	
Lard	37
Crisco	7
Lard compound	13
Oleo	13
Nut margarine	4
Cottonseed oil	7
Mazola, etc.	
Eggs	102
Cereals and their products:	
Flour, wheat	332
rye	12
Graham	46
Corn meal	25
Hominy or grits	12
Cream of Wheat	7
Corn flakes	4
Rolled oats	58
Bread, wheat	457
rye	22
Graham	2
Rolls	22
Crackers	18
Cake	15
Pies	4
Macaroni	33
Spaghetti	
Noodles	
Rice	44

Item.	Pounds.
Sugars:	
Sugar	163
Corn sirup	36
Molasses	
Honey	
Candy	10
Fresh fruits:	
Apples	219
Peaches	28
Bananas	54
Lemons	10
Oranges	100
Grapes	14
Berries	51
Cantaloupe	10
Watermelon	15
Other fruit	36
Grapefruit	32
Fruits, dried:	
Prunes	24
Raisins, currants	11
Fruits, canned:	
Peaches	23
Pineapple	2
Berries	22
Jelly	10
Fruit butters	
Vegetables, fresh:	
Potatoes, white	738
sweet	48
Cabbage	82
Spinach, kale, and other greens	78
Peas	11
Beans, string	37
Tomatoes	130
Onions	74
Corn	36
Lettuce	10
Celery	7
Beets	24
Carrots	52
Turnips	40
Cauliflower	27
Parsnips	
Peppers	
Asparagus	
Cucumbers	
Radishes	
Vegetables, dried:	
Beans, navy	24
Peas	5
Beans, lima	15
Vegetables, canned:	
Beans, baked	5
Peas	10
Corn	19
Tomatoes	25
Soup	5
Miscellaneous:	
Chocolate	1
Peanut butter	5
Cocoa	5
Cornstarch	4
Tapioca	2
Tea	10
Coffee	40
Gelatin	1
Ice	[1] 2,800

[1] 25 pounds daily for four months, approximately June to September, inclusive.

Bureau of Labor Statistics and Department of Agriculture Budgets Compared.

The Department of Agriculture has prepared a quantitative estimate of weekly food supply for an average family, consisting of husband, wife, and three children under 14, whose ages total not less than 20 nor more than 24 years. The family on which the estimate is based is slightly larger in equivalent adult males than the family used in the food budget of the Bureau of Labor Statistics, and thus the amounts of food are somewhat higher than those required for the standard family. Nutrition experts of the Department of Agriculture recognize that the amount of fresh fruits and vegetables in its budget is possibly higher than absolutely necessary for health. For this reason a considerable difference in the two budgets exists in this food group. In all other classes of food the two budgets do not vary materially.

The following is a comparison of the Bureau of Labor Statistics food budget with the dietary standards established by the Department of Agriculture:

COMPARISON OF BUREAU OF LABOR STATISTICS AND DEPARTMENT OF AGRICULTURE BUDGETS SHOWING WEEKLY QUANTITIES OF FOOD EXPRESSED IN POUNDS OF FRESH AND EQUIVALENT WEIGHTS.

Article.	Bureau of Labor Statistics.	Department of Agriculture.
Vegetables:	*Pounds.*	*Pounds.*
Fresh, starchy	15.1	[1]
leafy	3.4	[1]
other	8.3	[1]
Canned	1.2	[1]
Dried (fresh weight [2])	5.1	[1]
Fruits:		
Fresh	10.9	[1]
Canned	.9	[1]
Dried (fresh weight [2])	4.0	[1]
Total, vegetables and fruits	48.9	70.0
Milk (14 quarts)	30.8	30.8
Meats (except bacon and salt pork), fish, poultry, cheese, eggs, etc	11.8	10.5
Cereals and their products (flour, meal, rice, breakfast foods, macaroni, bread,[3] crackers, etc.)	19.0	16.0
Sweets (sugar, molasses,[4] sirup,[4] etc.)	3.9	4.5
Fats (butter, oil, lard, bacon,[5] salt pork,[5] cream,[5] etc.)	3.7	4.0
Total (exclusive of tea, coffee, and condiments)	118.1	135.8

[1] Vegetables and fruits are not subdivided in the Department of Agriculture's budget.
[2] 6 times dried weight equals fresh weight.
[3] 1 pound of bread equals three-fourths pound of flour.
[4] 1 pound of molasses, sirup, or candy equals three-fourths pound of sugar.
[5] 1 pound of bacon or salt pork equals three-fourths pound of butter, and 1 pound of cream equals one-fourth pound of butter.

The Department of Agriculture employs fresh and equivalent weights in its estimate. One pound of dried fruit or vegetables is counted as six pounds of fresh, and the weight of cereals, sweets, and fats is converted to equivalent pounds of flour, sugar, and butter, respectively. For the purpose of comparison the Bureau of Labor Statistics budget has been computed by approximately the same method.

Variety of Foods Available in Different Seasons.

The food budget, however, in either of the forms in which it has been presented, does not offer to the social worker, or to the housewife, a practical guide in the purchasing of a health-producing diet-

ary. In order to assist in buying, or to serve as a check against quantities ordinarily purchased, the weekly quantities of the actual articles of food embraced in the budget have been segregated into (1) year-round foods, (2) special summer foods, and (3) those which will probably be used during the winter season when the price of fresh fruits and vegetables prohibits their purchase.

The budget as a whole consists of 5,961 pounds of food (dry weight) per year, or approximately 115 pounds per week for the family. About 100 pounds per week are articles of food of a more or less staple character which may be purchased at any season of the year. These foods have been placed in the year-round group, leaving 15 pounds of food per week to be made up from the seasonal groups. The foods which are abundant only in the summer season make up a weekly average of 7.6 pounds; those which are available in the winter season, 6.1 pounds. These averages, however, are on the basis of 52 weeks, and to ascertain the quantity per week of the season (approximately 26 weeks) in which they are to be used, it will be necessary practically to double the listed quantities of winter and summer-season foods. Following is the list of year-round, winter-season and summer-season foods, showing the average weekly quantity of each allowed in the budget.

AVERAGE WEEKLY QUANTITIES OF YEAR-ROUND, WINTER-SEASON, AND SUMMER-SEASON FOODS CONTAINED IN BUDGET.

Year-round foods.

Article.	Pounds.	Article.	Pounds.
Meat and fish	8.5	Sugar	3.1
Eggs	[1] 2.0	Corn sirup, molasses, and honey	.7
Milk, whole	[2] 30.8	Apples	4.2
Condensed and evaporated milk	1.2	Oranges	1.9
Cheese	.4	Bananas	1.0
Butter (including oleo and nut margarine)	1.8	Potatoes	14.2
Lard, Crisco, and compounds	1.0	Sweet potatoes	.9
Flour	7.5	Cabbage	1.6
Corn meal	.5	Spinach, kale, and other greens	1.5
Rice	.8	Onions	1.4
Bread and rolls	9.6	Coffee	.8
Breakfast foods	1.3	Tea	.2
Cake and pies	.4	Miscellaneous	2.0
Crackers	.3	Total	100.2
Macaroni, spaghetti	.6		

Winter-season foods.[3]

Grapefruit	0.6	Navy beans	0.5
Prunes	.5	Lima beans	.3
Canned peaches	.4	Canned peas	.2
Canned berries	.4	Canned corn	.4
Carrots	1.0	Canned tomatoes	.5
Turnips	.8		
Beets	.5	Total	6.1

[1] 1.33 dozen.
[2] 14 quarts.
[3] Quantities to be doubled during the winter season, November to April, inclusive.

AVERAGE WEEKLY QUANTITIES OF YEAR-ROUND, WINTER-SEASON, AND SUMMER-SEASON FOODS CONTAINED IN BUDGET—Concluded.

Summer-season Foods.[1]

Article.	Pounds.	Article.	Pounds.
Peaches	0.5	Tomatoes	2.5
Grapes	.3	Corn	.7
Berries	1.0	Lettuce	.2
Watermelon	.3	Miscellaneous vegetables	.5
Miscellaneous fruits	.7		
Peas	.2	Total	7.6
Beans, string	.7		

[1] Quantities to be doubled during the summer season, May to October, inclusive.

In listing these foods and the average weekly quantities, it is not the intention to recommend that the housewife who buys food for a family of five should attempt to secure either these exact foods or the specified quantities. The articles and quantities will necessarily have to be treated with a large degree of elasticity. In the year-round foods, it will of course be advisable to vary the amounts according to the season, using more fats and carbohydrates during the winter and less during the summer when heat-producing foods are not so much required. Especially will this be true of fat meats, corn meal, macaroni, rice, beans, etc. On the other hand, eggs, apples, cabbage, spinach, kale, etc., although available throughout the year, will probably be used in greater quantities in summer than in winter.

On account of variations in the length of seasons in different sections of the country, as well as the overlapping of foods from one season to the other, a general grouping of seasonal foods is extremely difficult. Grapefruit, for instance, while primarily a winter fruit, may be secured in some of the months usually classed in the summer season. Many families also make it a practice to use navy and dried lima beans and canned fruits and vegetables in the summer as well as in the winter season.

The list will prove valuable only as a guide in suggesting the variety of foods available during the different seasons of the year and indicating something of the relative proportions in which they may be purchased in order to furnish a family of five with a dietary which will promote health.

Clothing.

THE level of health and decency in clothing has been interpreted as a level which not only takes into account the physical needs of warmth, cleanliness, and comfort, but also has such regard for appearance and style as will permit the family members to appear in public, and within their necessarily rather narrow social circle, with neatness and self-respect. In other words, the clothing standards of the family are intended to provide a fair degree of that mental satisfaction which follows being reasonably well dressed. But, while admitting the desirability of a more generous wardrobe, an effort has been made to allow only those quantities of clothing consistent with the *minimum* requirement for health and decency, and, where a doubt has existed, to err on the side of conservatism.

The clothing budget herewith presented has as its basis the clothing budgets of approximately 850 families having 3 children under 15 years of age, which were included in the survey of the Bureau of Labor Statistics in 1918–19. This basic material was first modified as the result of a large number of interviews with families in Washington, D. C. The material was then published in tentative form (MONTHLY LABOR REVIEW, December, 1919, pp. 22–29), as applying to the family of a clerical worker in Washington. Criticisms and suggestions from clothing experts all over the country have been received and that budget has been made over into the manual worker's family clothing budget here submitted. The clothing budget, like the food budget, is made up of the articles actually worn by real workers and their families. The modifications made in the average clothing budget of the families studied in order to arrive at a standard clothing budget are much more extensive than in the case of the food budget. The articles of clothing are the same in both the actual average budget and the proposed standard budget, but the quality of material and the yearly replacement in the latter have been determined very largely by special study.

The quantities listed in the clothing budget are the *annual replacements*, not the number of garments possessed at any one time. For example, in the husband's clothing budget the annual replacement of a summer suit is given as one-third, which means that one summer suit is expected to last three years. Allowance is made for the purchase of two winter union suits each year, but this does not mean that the worker possesses only two sets of winter underwear. He may have six sets or any other number, but with reasonable care he can manage comfortably by purchasing two suits a year.

In preparing this quantity budget, a considerable amount of sewing at home has been assumed as possible, and has been indicated accordingly. When more than the specified amount is done, a saving may be effected, or the family clothed more abundantly. On the other hand, where little or no home sewing can be done, the number of garments allowed will be barely sufficient to maintain decency. The investigations of the Bureau of Labor Statistics show that during the war clothing purchases of the average worker's family were considerably curtailed. When it is necessary to economize the expense for clothes may be greatly reduced for a season or two, but the effect of renewing the clothing budget after it has become depleted creates a serious situation in family expenditures.

In order to make the yearly clothing budgets more serviceable as a guide in buying, the annual replacements for each member of the family have been divided into year-round, summer, and winter clothing.

In basing the quantities of clothing on what has been considered reasonable length of wear, it has been necessary to assume that clothing purchased in conformity with this budget will be of good average quality.

Clothing Budget of a Family of Five.

The clothing budgets of the husband, wife, and 3 children are given below:

ANNUAL QUANTITY OF CLOTHING FOR A FAMILY OF FIVE INCLUDING HUSBAND, WIFE, AND THREE CHILDREN (BOY AGED 12, GIRL 6, AND BOY 2).

Husband.

Article.	Replacement per year.	Article.	Replacement per year.
Summer clothing.		*Year-round clothing*—Concluded.	
Hats, straw	1	Socks, cotton	12
Union suits	3	Shoes:	
Suits	⅓	Dress	½
Winter clothing.		Work	2
Hats, felt	⅓	Shoe repairing:	
Overcoats	½	Whole soles	1
Sweaters	½	Half soles and heels	1
Union suits	2	Rubbers	½
Suits	⅓	Gloves:	
Gloves, leather, street	1	Cotton, work	6
Year-round clothing.		Collars	6
Caps	1	Ties	2
Work trousers (or overalls)	2	Handkerchiefs, cotton	8
Shirts:		Garters	2
Dress	1	Belts	⅓
Work	5	Suspenders	1
Nightshirts	2	Umbrellas	½
		Cleaning and pressing (suit)	1
		Miscellaneous	(1)

Wife.

Summer clothing.		*Year-round clothing.*	
Hats	1	House dresses	2
Skirts, cotton, wash	½	Aprons, kitchen (to be made at home)	1
Waists, cotton (to be made at home)	3	Corsets	2
Waist, dress	½	Corset covers	2
Dresses, cotton, thin (to be made at home)	2	Combinations, muslin	2
Union suits	2	Brassieres	2
Petticoat, muslin	1	Nightgowns, muslin	2
Shoes, low	1	Kimonos	½
Gloves, cotton	1	Stockings, cotton	8
Winter clothing.		Shoe repairing:	
Hats	½	New heels	3
Suits, wool	½	Half soles and heels	1
Dresses, wool	½	Handkerchiefs, cotton	8
Coats, wool	⅓	Umbrellas	⅓
Petticoats (Venetian cloth or sateen)	1	Rubbers	1
Union suits	1	Cleaning and pressing (suit)	1
Shoes, high	1	Miscellaneous	(2)
Gloves (not kid)	½		

Boy, 12 years of age.

Summer clothing.		*Year-round clothing.*	
Trousers, separate, cotton	2	Caps	2
Overalls	1	Suits, wool	1
Union suits	3	Shirts or blouses, cotton	5
Shoes, low	2	Pajamas or nightshirts	2
Winter clothing.		Stockings, cotton	12
Trousers, separate, wool	1	Shoe repairing (half soles and heels)	5
Overcoats or mackinaws	½	Rubbers	1
Sweaters	½	Ties	2
Union suits	2	Handkerchiefs, cotton	6
Shoes, high	3	Garters (to be made at home)	2
Gloves (knit)	2	Belts	½
		Miscellaneous	(3)

[1] Lump sum of money equal to about 7 per cent of total cost of husband's clothes.
[2] Lump sum of money equal to about 8.5 per cent of total cost of wife's clothing.
[3] Lump sum of money equal to about 3 per cent of total cost of 12-year-old boy's clothing.

ANNUAL QUANTITY OF CLOTHING FOR A FAMILY OF FIVE INCLUDING HUSBAND, WIFE, AND THREE CHILDREN (BOY AGED 2, GIRL 6, AND BOY 12)—Concluded.

Girl, 6 years of age.

Article.	Replacement per year.	Article.	Replacement per year.
Summer clothing.		*Winter clothing*—Concluded.	
Hats	1	Shirts	2
Dresses, cotton (to be made at home)	6	Drawers, knit	2
Petticoats, muslin	2	Nightgowns, outing flannel	1
Shirts	3	Shoes, high	3
Drawers, muslin	5	Gloves or mittens (knit)	1
Nightgowns, muslin	1	*Year-round clothing.*	
Shoes, low	2	Aprons (to be made at home)	1
Winter clothing.		Underwaists	4
Caps or hats	1	Stockings, cotton	12
Dresses, wool (to be made at home)	1	Rubbers	1
Coats, wool	1	Handkerchiefs, cotton	6
Sweaters	1	Garters	2
Petticoats, outing flannel	1	Miscellaneous	[4]

Boy, 2 years of age.

Summer clothing.		*Winter clothing*—Concluded.	
Hats, duck	1	Nightgowns, outing flannel	1
Undershirts	3	Shoes, high	2
Drawers	3	Mittens (knit)	1
Nightgowns, muslin	1	*Year-round clothing.*	
Shoes, low (sandals)	2	Dresses, cotton suits, rompers, overalls, etc. (to be made at home)	8
Winter clothing.		Underwaists	4
Caps	1	Stockings and socks, cotton	10
Overcoats	1	Garters	2
Sweaters	1	Miscellaneous	[5]
Undershirts	2		
Drawers	2		

[4] Lump sum of money equal to about 8.5 per cent of total cost of 6-year-old girl's clothing.
[5] Lump sum of money equal to about 6 per cent of total cost of 2-year-old boy's clothing.

Individual tastes and variations in climate will of course make many changes and adjustments necessary for each family. Occupational requirements will also enter in, especially in the clothing budget of the husband. These variations could not be taken into consideration in preparing a general budget for a standard workingman's family.

It is highly important to consider the clothing budget of each individual member of the family. In the husband's clothing, for instance, allowance has been made for the purchase of only two pairs of work trousers or overalls each year. This appears small until considered in conjunction with the allowances for suits. A summer suit and a winter suit, each to last three years, have been allowed. In other words, the purchase of two suits in three years has been provided, which means that every 18 months on the average the workingman will be able to supplement his work clothes with one suit of discarded "dress up" clothes. Assuming that the workingman's "Sunday" clothes are not subjected to very hard use, these suits when ready for every-day wear may reasonably be expected to form the major part of his work clothing, and not more than two additional pairs of work trousers will be required each year. Since suit coats usually outwear

the trousers, no separate coats to wear with the work trousers have been deemed necessary

No quantitative allowances have been made for raincoats, slippers, bathrobes, purse, repairs to watch, or any other item of clothing expense which occurs only occasionally. However, a lump sum of money equivalent to something like 7 per cent of the total cost of the husband's clothing has been allowed to cover purchases of this character.

In the wife's clothing, the two new house dresses to be purchased each year may prove inadequate, unless the old summer dresses of previous seasons are worn as everyday house dresses also.

Few women, especially where the climate permits of uniform underwear throughout the year, will wear all the varieties of underwear listed, i. e., winter union suits, summer union suits, combinations, corset covers, brassieres, petticoats, etc. However, the quantities listed under each are small, and where fewer kinds of articles are worn a larger quantity of each will be required.

This is distinctly a health and decency budget, with little provision for "style" or fashionable dress. No allowance has been made for an afternoon dress of silk, a silk petticoat, or silk stockings. Although these articles are doubtless desirable, a wool dress, a suit skirt with a dress waist, a Venetian cloth or sateen petticoat, and lisle or cotton stockings will supply all that is absolutely essential for health and decency.

To care for the multitudinous purchases of "extras," such as dress shields, veils, hair nets, hairpins, combs, slippers, hand bag, dress trimmings, thread, buttons, etc., a lump sum of money of about 8.5 per cent of the total cost of the wife's clothing has been suggested.

The clothing needs of growing children are almost beyond the ability of the budget maker to ascertain or estimate. A reasonably generous clothing allowance has been made for the children, but it is expected that some clothing will be handed down and made over for the younger children, in order to get along on the amounts specified.

In practically all the families visited in the Bureau of Labor Statistics' investigations there seems to be a general agreement that the expense for shoes and stockings for children is one of the serious drains on the family's finances. For the boy of 12, the budget allows for the purchase every year of three pairs of high shoes and two of low, with one repairing of half soles and heels for each of the five pairs. For the girl of 6 years, three pairs of high and two of low are allowed; for the boy of 2 years, two pairs of high shoes and two of sandals. In the case of the two younger children, shoe repairing is not considered feasible and provision has not been made for it.

Housing.

A HOUSING standard based upon health requirements must consider primarily air space, ventilation, lighting, sanitation, privacy, and proper separation of the sexes. In applying these requirements to particular dwellings, the factors to be taken into account are number of rooms per person, sanitary conveniences, floor space, window space, location, and frontage. The standard sug-

gested below is for urban industrial communities, and conforms quite closely to actual housing conditions existing in industrial centers of the country.

Number of Rooms.

Figures collected by the Bureau of Labor Statistics in the 1918–19 study indicated that the majority of workingmen's families of average size and average income lived in houses which furnished approximately one room per person. The families included in the survey were primarily Americans. No schedules were taken from non-English speaking families who had been in the United States less than five years. Families with boarders or more than three lodgers were excluded.

For 20 cities selected at random, and including all families scheduled regardless of size or income, those living in houses averaged 1.007 rooms per person, and those in flats and apartments 0.931 room per person. The standard health and decency budget must provide at the very least as many rooms per person as the average family were found to occupy. A housing standard of one room per person, exclusive of bath, has, therefore, been adopted as the minimum requirement consistent with health and decency.

For the average family of five persons a house of five rooms, consisting of living room, dining room, kitchen, and two bedrooms, should be provided as the minimum for health and decency. For the standard family, composed of husband, wife, and three children, boy aged 12, girl 6, and boy 2, three sleeping rooms are needed in order to secure reasonable privacy—one bedroom for the parents and two for the children, one for each sex. To meet this need the living room can be arranged so as to be adaptable for sleeping purposes. Several arrangements are possible. A very practical one would be to have three bedrooms, a living room, and a combination kitchen and dining room. Still another would give a combined living and dining room, kitchen, and three bedrooms, or two bedrooms and a "parlor." The latter arrangement is especially desirable as the children grow up and begin to receive visitors in the home.

Size of Rooms.

Thus far only the number of rooms has been considered. For purposes of health it may be conceded that floor space is of more importance than the mere number of rooms. The size of the various rooms adopted by the Bureau of Industrial Housing and Transportation of the Department of Labor, which undertook the war housing of the Government other than that required for shipbuilders, is given below.

	Minimum size.
Large bedroom	10 by 12 feet.
Small bedroom	8 by 10 feet.
Parlor or living room	10 by 12 feet.
Dining room	9 by 12 feet.
Kitchen (where there is no separate dining room)	10 by 12 feet.

These standards are for the different rooms in detached, semi-detached, flat, or row houses and represent the combined judgment of 25 architects, sanitary inspectors, builders, and students of housing. It does not, however, seem advisable to incorporate in the housing

standard to be adopted rooms of exactly the size prescribed in the above specifications.

Especially is this true since the standard herewith presented permits of considerable variation in arrangement. If only two bedrooms are provided, both of them should be of the "large" type, 10 by 12 feet. For a family of five, the "small" bedroom, 8 by 10, will scarcely be practicable, unless three sleeping rooms are to be provided. Whether a combined kitchen and dining room, or a combined living and dining room, is selected, a room larger than 10 by 12 is desirable. Assuming any of the arrangements possible in a five-room house, approximately 560 square feet of floor space, exclusive of bath, is the minimum health and decency requirement for the standard family of five persons. When space is provided for bathroom, closets, hall, and storage space, the gross area of the standard house of five rooms has been fixed at 660 square feet. This gives little enough floor space for a family of five persons.

Light and Ventilation.

In the matter of light and ventilation the requirements set up by the Bureau of Industrial Housing and Transportation of the Department of Labor seem to be entirely satisfactory. The paragraphs on ventilation are as follows:

> Every room to have at least one window opening directly to the outer air. Two windows in each room generally preferred; one window sufficient in small bedrooms. Each room to have a window area of not less than 12 square feet.
>
> Cross ventilation as direct as possible to be provided for all rooms through windows, transoms, or doors; communicating door recommended between front and rear bedrooms in row houses.
>
> Every bathroom to have window of not less than 6 square feet in area opening directly to the outer air.

Sanitation and Drainage.

In the 20 cities of the 1918–19 study of the Bureau of Labor Statistics selected, the families included over four-fifths of those in flats and apartments and over three-fifths of those in individual houses had inside water-closets. Over one-half of the families in both multiple dwellings and individual houses also had baths. It is felt that a housing standard which is to provide health and decency must include a complete bathroom, with toilet.

In connection with the standard house such drainage should be provided as will render impossible stagnant pools on the premises or the collection of water in the cellar or underneath the house.

Construction and Arrangement.

A house must, of course, be built in compliance with housing laws, local building codes, and ordinances. The roof must be water-tight, and the walls substantially and durably constructed so as to resist heat and moisture, according to the climatic conditions of the locality.

Accepting the constructional standards recommended by the Bureau of Industrial Housing and Transportation, the standard house should provide for closet or storage space. The halls, stairs, and doors should be so constructed and located as to permit of easy moving of the furniture.

Porches are highly desirable and should be durably constructed. In most latitudes the porches may be made to serve all the year around as an additional sleeping room.

Neighborhood and Surroundings.

It is presumed that the standard house for the workingman's family will be located in a neighborhood with reasonably well maintained streets, and fairly accessible to means of transportation, playgrounds, and places of amusement and recreation. What is commonly termed a "slum" would not supply the proper neighborhood surroundings for a house intended to provide the minimum requirements of health and decency.

Heat and Artificial Light.

IT HAS not seemed feasible to adopt any special form of heating for the standard workingman's house. There is a wide range of means by which adequate heating may be had. Whatever the method of heating, however, it should be such as to permit of heating the principal living room to a temperature of 68° F. in the coldest weather in any given locality. Small open grates in houses without double walls or air spaces, in States as far north as Pennsylvania, as were found in the company housing survey of the Bureau of Labor Statistics,[2] would not be in compliance with this standard.

Fuel consumption depends so much upon geographic location and climatic conditions that an attempt to establish minimum quantity standards seems impracticable. A definite standard for fuel would be complicated further by the various sizes and kinds of coal. In lighting, the various systems of gas, electricity, and kerosene offer another obstacle to quantity standards since the system used usually does not depend so much upon the desire of the family as upon the character and equipment of the house.

Furniture and Furnishings.

NO STANDARD quantity budget has yet been established for the upkeep of household equipment. The Bureau of Labor Statistics has, however, worked out a list of furniture, furnishings, and utensils necessary to equip completely a house of five rooms, living room, dining room, kitchen, and two bedrooms, occupied by the standard family of five persons. The list of articles, together with a brief description, is given below.

[2] The results of this survey are published in Bulletin 263 of the Bureau of Labor Statistics, now in press.

NECESSARY HOUSEHOLD EQUIPMENT.

Furniture.

Article.	Number.	Description.
Refrigerator	1	Smallest size and make sufficient in capacity for economical preservation of food and economy in the purchase of ice.
Tables:		
Dining room	1	Oak extension table, plain, durable quality.
Living room	1	Oak, plain, durable quality.
Kitchen	1	48-inch pine table, with 1 drawer.
Chairs:		
Dining room	6	Plain durable oak.
Bedroom	4	Strongly made.
Living room	4	Oak or other durable wood.
Kitchen	1	Painted wood.
High chair	1	
Rugs:		
Living room	2	Small Axminster rugs.
Dining room	1	Large Crex or Rattania.
Bedrooms	4	Rag or Crex rugs, 3 by 6 feet.
Gocart	1	Folding, with metal framework and cloth top.
Sewing machine	1	Standard make.
Settee or davenport	1	Oak or other durable wood, imitation leather upholstery.
Sideboard	1	Medium size, oak.
Bureaus	2	Plain bureau; 1 white painted bureau.
Chiffonier	1	White painted wood.
Beds, mattresses, and springs:		
Double	1	Bedstead, plain (to match bureau); durable felt mattress, and spring.
Single	2	Each: White enameled bedstead; durable felt mattress, and spring.
Crib, mattress and spring	1	White enameled.

Furnishings.

Towels:		
Kitchen hand towels	3	Cotton.
Bath towels	10	Turkish.
Hand towels	12	Part linen.
Tablecloths	3	Cotton, to be hemmed at home.
Table cover	1	For use when table is not set.
Napkins	18	Part linen, 22-inch.
Blankets:		
Pair double-bed size	1	Part wool.
Pairs single-bed size	2	
Pair crib size	1	
Comforts:		
Double-bed size	1	Cotton, silkaline covered.
Single-bed size	2	
Crib size	1	
Spreads:		
Double-bed size	2	Good grade of rippelette, medium weight; number sufficient to provide for laundering.
Single-bed size	3	
Pillows:		
Ordinary size	4	Mixed feathers.
Crib size	1	
Sheets:		
Double-bed size	4	Number sufficient to provide for laundering.
Single-bed size	6	
Crib size	4	
Pillow cases:		
Ordinary size	8	Number sufficient to provide for laundering.
Crib size	3	
Dish towels	8	Cotton, to be hemmed at home.
Table oilcloth	1	For pine table.

Utensils.

Laundry tubs	2	Medium size, galvanized.
Washboard	1	Zinc.
Wringer	1	Medium size.
Boiler	1	Medium size, with copper bottom.
Flat irons	3	4, 5, and 6 pound irons.
Mops	2	1 handle for scrub mop, and one 16-ounce dry mop.
Brooms	2	Good quality broom.

NECESSARY HOUSEHOLD EQUIPMENT—Concluded.

Utensils—Concluded.

Article.	Number.	Description.
Dishes:		
50-piece set	1	Plain.
Water pitcher	1	Plain heavy glass.
Vinegar cruet	1	Do.
Oil cruet	1	Do.
Salt shaker	1	Do.
Pepper shaker	1	Do.
Tumblers	6	Plain.
Knives, forks, etc.:		
Butter knife	1	Quadruple plated, plain.
Sugar spoon	1	
Knives	6	
Forks	6	
Teaspoons	12	
Tablespoons	6	
Carving set	1	Good quality steel knife and fork, and sharpener.
Kitchen utensils:		
Refrigerator pan	1	Galvanized.
Ice pick	1	Small, with wooden handle.
Garbage pail	1	Galvanized, medium size.
Towel rack	1	Wood, with three rods.
Soap dish	1	Wire.
Dish pan	1	Enameled.
Dish drainer	1	Heavy wire, with plate holders.
Teakettle	1	Enameled.
Coffeepot	1	Gray enamel.
Teapot	1	Do.
Preserving kettle	1	Do.
Jelly glasses	36	With covers.
Fruit jars	36	Jars holding 1 quart.
Stewpans or kettles	2	Enameled.
Cake pans	2	Heavy, pressed tin.
Pie pans	2	Pressed tin.
Bowls	2	
Large bread pans	2	Pressed tin.
Bread-raising pan	1	Heavy tin, with cover.
Roasting pan	1	Medium size.
Bread box	1	
Frying pans	2	1 small pan, 1 medium-sized iron pan.
Double boiler	1	Enameled, holding 1 quart.
Muffin pan	1	Tin, for 1 dozen muffins.
Colander	1	Gray enamel.
Chopping bowl and knife	1	Medium-sized bowl, single knife.
Meat grinder	1	Medium.
Potato masher	1	Wire, with wooden handle.
Egg beater	1	Medium size and weight.
Grater	1	Tin.
Strainer	1	
Bread board	1	18 by 24 inches.
Large salt shaker	1	
Biscuit cutter	1	Tin.
Rolling pin	1	
Flour sieve	1	Medium size.
Measuring cup	1	Tin or aluminum.
Lemon squeezer	1	Glass.
Can opener	1	
Large knife	1	
Case knives and forks	2	
Paring knife	1	
Wooden spoon	1	
Mixing spoons	3	
Pancake turner	1	

This budget assumes the existence of an equipment of household furniture similar to the above, since it is generally true that married couples purchase the major part of their household furniture either at or shortly after marriage. Consequently, the problem is to provide only for the necessary annual upkeep.

Conclusions as to the amount necessary for the annual upkeep of furniture and household furnishings for a family of five have been based on approximately 100 schedules, showing one year's expenditures for furniture and furnishings, secured in 1918–19 by the Bureau of Labor Statistics from families consisting of husband, wife, and three children under 15 years of age, living in large Eastern or Middle Western cities, and having a total annual expenditure of $1,500 and under $2,100.

Inasmuch as the families studied spent annually from $1,500 to $2,100, they were presumably living at a fairly decent and healthful standard. Their household equipment, therefore, may be regarded as reasonably sufficient both in quantity and quality, although, of course, not luxurious. From the special study of the expenditures of these families for furniture and furnishings, the Bureau of Labor Statistics has calculated tentatively that the amount of annual upkeep of household equipment approximates 7 per cent of the total cost of purchase. In the budgets which the Bureau of Labor Statistics has prepared, the practice has been followed of ascertaining the approximate cost at current prices of the above list of household equipment and then allowing 7 per cent of the total renewal cost for annual upkeep. Such a figure, however, is of no use in determining a quantity standard, but it is a guide to the amount which should be allowed in the cost budget.

Miscellaneous.

UNDER miscellaneous expenditures a quantity standard is possible in only a limited number of items. Following are the principal miscellaneous items which must be provided for in the cost budget of the family:

Laundry work.
Cleaning supplies and services.
Maintenance of health.
Insurance:
  (*a*) Life (disability).
  (*b*) House and furniture.
Car fare:
  Husband.
  Wife and children.
Amusements and recreation.
Newspapers.
Organizations:
  (*a*) Church.
  (*b*) Labor.
Incidentals, including—
  Tobacco.
  Telephoning and telegraphing.
  Stationery and postage, etc.

Expenditure for assistance with laundry work may not be considered possible in the family of an industrial worker. However, from the standpoint of health it seems that the mother of 3 children who must do the cooking for the family, the general cleaning of the house, the sewing and mending, the marketing and shopping, should be allowed assistance with the family laundry work and scrubbing, amounting to one day per week.

The following quantities seem to provide the minimum requirement of cleaning supplies and services to insure personal and household cleanliness:

Cleaning supplies and services.

	Quantity.
Personal:	
Toilet soap, small bar	90
Toothbrush	5
Toothpaste, tube or box	12
Combs, hard rubber	1
Hairbrushes	½
Shoe polish, box	6
Barber's services—	
Husband, hair cut	12
Children, hair cut	8
Household:	
Laundry soap, ½-pound bar	150
Starch, pound	6
Cleanser, box	36
Small lump sum for unspecified cleaning supplies and services, such as borax, ammonia, washing powder, bluing, insect powder, etc.	

Some allowance must, of course, be made for the maintenance of health. This item includes expenditures for physician, dentist, oculist, glasses, and drugs, including prescriptions and prepared remedies.

No definite number of doctor's visits can be assumed as necessary, but aside from the occurrence of major illnesses, colds and the various diseases of childhood will doubtless make a doctor's services necessary at some time during the year.

At least one visit to the dentist during the year for three members of the family will be necessary, and rarely does one visit prove sufficient.

There is, however, no available quantitative measurement, and the Bureau of Labor Statistics, in preparing budgets, has had to resort to the average expenditure for health of large numbers of families investigated.

In the first standard budget prepared by the Bureau of Labor Statistics provision was made for a life insurance premium sufficient to pay for a $5,000 policy for the head of the family. This was considered the absolute minimum for protection and safety, since in the event of the husband's death it would furnish an income to the wife and children of not over $300 a year, or $6 a week. With the increased cost of living this amount is clearly insufficient. To give the same degree of protection as was accorded in 1914 by a $5,000 policy, it would now be necessary for the husband to carry $10,000. Granting that, in order to help carry the burdens of the war, the workingman and his family must make some sacrifices in their standards of living, it would certainly be inadvisable at this time to advocate a policy of less than $7,500 for the head of the family.

It is highly important that every family should carry insurance on the family dwelling, if owned, and on household furniture. The loss of household equipment is an extremely serious matter to a family of low income. The budget should provide for the premium on a policy large enough to cover the replacement cost of the family's essential personal property in case of loss by fire.

The quantitative standard for car fares will have to be determined locally in each city for which a budget is prepared. If the husband is compelled to ride regularly to and from his work, at least 600 rides will be required.

If the wife is compelled to use a street car for shopping and marketing the necessary allowance must be made for this also.

It is impossible to establish quantity standards for amusements and recreations. The importance of recreation as a factor in healthy living need not, of course, be emphasized. It is accepted as an everyday fact. The only question is as to the character and cost of such recreation. Much wholesome amusement arises naturally within the circle of a family and its friends and costs nothing. On the other hand, the complexity of modern city life places a money price on many simple and desirable forms of amusement. Thus a picnic for a family, or a visit to the park, involves a considerable item of car fare, while a trip on the river will cost a dollar or more. Moreover, occasional visits to the moving pictures are to be expected of at least some members of a family. Thus, even though the more expensive forms of amusement and recreation, such as summer vacations, are eliminated, some expenditures for this item are absolutely necessary if a family is not to lead a completely isolated life.

One daily newspaper should be provided for the workingman's family, and at least one good magazine is indispensable for a proper standard of living.

Organizations, such as the church, and labor unions, play such an important part in the life of the average worker and his family that some expenditure on this account must be regarded as essential to normal living, but no quantitative standard can be established.

In addition to the items listed above there are a large number of other expenses, mostly small or occasional, which can not be entirely avoided by a worker's family—such, for instance, as stationery and postage, telephoning and telegraphing at times, tobacco, etc. No minimum quantities for these items can possibly be specified, and the only solution is to grant a modest sum of money to cover expenditures for incidentals.

The Government's Wage Policy During the Last Quarter Century.[a]

By Mary Conyngton.

IN A sense the Government can scarcely be said to have had a wage policy for half a century or more. Unquestionably when, at the close of the Civil War, the salary scale was set, it was liberal as compared both with the cost of living and the prevailing wages and salaries outside of the Government service. The idea that a Government position was a "cinch," "an easy thing" became then so widespread and so deeply rooted that it lingers to this day, to the considerable detriment of the service. But having established its organization and set its scale of compensation, the Government appeared to feel that the matter was done with forever, and took no further steps except when in some particular group or division conditions arose which forced action. Thus such changes as occurred were merely alterations in specific salaries or groups of salaries, and the salary scale as a whole was almost untouched.

While prices remained fairly constant this did not matter so much, but for some time before the European War began there had been an upward tendency which brought about a relative reduction in the value of established salaries, and with the outbreak of the war this tendency was sharply accentuated. Wages and salaries which had before been satisfactory became altogether inadequate. The question of adjusting earnings to the cost of living became one of vital importance, and in private business enlightened employers on the one hand, and the more intelligent employees on the other, perceived the necessity of maintaining some relation between rates of wages and prices of commodities. Some employers adopted the policy during this period of revising wages periodically according to the fluctuations of the cost-of-living figures published by the Bureau of Labor Statistics, Dun, or Bradstreet, while others merely made advances which they considered met in a general way the needs of the employees under the changed conditions.

The entrance of the United States into the war not only increased enormously the number of employees in the Federal service, but brought the Government into close relations with labor outside of its own immediate force. Contracts for food, clothing, and munitions had to be let, and disagreements between the employers and employees engaged in producing these supplies might cause delay, with consequences to the successful prosecution of the war which no one could foresee. Consequently, in regard to these outside workers, it was necessary to have a policy and to declare it, and from the first the Government committed itself to the general principle that the

[a] The tables in the following discussion, except where otherwise credited, are based on figures furnished to the Commission on Reclassification by the various bureaus, divisions, and groups concerned, and used by the commission as the basis of a series of charts prepared under the direction of Dr. C. D. Jarvis, of the Bureau of Education. One of these charts is given on page 31 and one on page 33.

worker is entitled to a living wage, and that to insure his getting this, wages must rise proportionately with the cost of living.

The War Department announced this policy in regard to outside workers during the first year of our participation in the war. In General Order No. 13, issued by the Chief of Ordnance, November 15, 1917, the following section appears:[1]

Wage standards.—Standards already established in the industry and in the locality should not be lowered. The minimum wage rates should be made in proper relation to the cost of living, and in fixing them it should be taken into consideration that the prices of necessities of life have shown great increases.

The National War Labor Board, created especially to deal with labor difficulties, indorsed the principle unreservedly, and based numerous decisions upon it. In a number of instances the board specifically provided for periodic revision of its findings, in order that wages might be adjusted to the fluctuations of the index figure of the cost of living, as worked out by its staff or by the Bureau of Labor Statistics. In one of its early awards it explicitly declares its policy. After decreeing an increase in wages, the award continues:[2]

The wage scale adopted here is based upon the present cost of living. On January 1 and July 1 of each year during the war and for six months thereafter, there shall be an adjustment of wages which shall automatically take place on the above dates, provided the Government statistics show an increase in the cost of living of not less than 10 per cent of the cost on July 1, 1918, in which case the employee shall receive an increase in wages equal to the said increase in cost of living. Should said statistics show a decrease of not less than 10 per cent in the cost of living, then the rate of wages shall be correspondingly decreased.

Another Government agency, the so-called Macy Board, which was established to handle wage matters in the shipyards of the country, also announced a definite policy of periodic adjustments of wages during the war. Such adjustments were to take place on October 1 and April 1, provided a material change in the cost of living had taken place since the last adjustment date.[3]

These were all wartime measures, but the Government has formally recognized the principle since the signing of the armistice. At the time of the soft-coal strike last winter the Fuel Administrator, though openly and bitterly opposed to the demands of the men, admitted that they might fairly claim an advance proportioned to the increase in cost of living, and fixed a rate which according to his calculation met this condition. Along the same line the Esch-Cummins bill, adopted in February by both Houses of Congress, definitely instructs the Railroad Labor Board, when fixing rates of pay for railroad workers, to take into consideration the relation between wages and the cost of living.

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[1] Labor policy of the War Department, MONTHLY REVIEW, December, 1917, p. 52.

[2] National War Labor Board, Docket No. 35, Employees *v.* Manufacturers of Newsprint Paper. Award rendered June 27, 1918.

[3] For a full statement of this policy see the awards of the Macy Board rendered October 24, 1918, establishing a uniform wage scale for shipbuilding workers. MONTHLY LABOR REVIEW, December, 1918, pp. 197–212.

Salaries of Government Employees, 1893 to 1919.

SO FAR as the general principle is concerned, then, the Government has placed itself on record as in favor of a definite relation between compensation and cost of living, this relation to be maintained by periodic revisions of compensation in order that the employee may not be adversely affected by increases in the cost of living, nor reap the whole benefit of decreases in that cost. In practice, however, so far as its own employees are concerned, the Government has shown no desire to translate this principle into action. In the tables which follow the average salaries paid to Government employees in the District of Columbia are for fiscal years beginning July 1 of the year shown. The indexes of retail prices of food are based on data furnished by the United States Bureau of Labor Statistics, and are for calendar years.

Table 1 relates to average salaries of all Government employees in the District of Columbia.

TABLE 1.—NUMBER AND AVERAGE SALARY OF GOVERNMENT EMPLOYEES IN THE DISTRICT OF COLUMBIA, 1893 TO 1919, AND PURCHASING POWER OF SALARY IN RELATION TO 1893 SALARY.

[The 1917 and 1919 average salary figures do not include the bonus. Those for 1919 include, however, the salaries of workers in the new organizations growing out of the war who came in at a higher level of salaries than prevailed in the older establishments and they also include certain salaries of Navy employees whose salaries were adjusted by the Henry award.[1] For the older Government employees these factors tend to offset the omission of the bonus and make the table a reasonably accurate statement of what has happened to them. The average salaries are based on figures given in the Official Register.

Year.	Number of employees.	Average salary.	Index of retail prices of food.	Purchasing power of salary in relation to 1893 salary.	Average salary necessary to maintain purchasing power of 1893 salary.
1893	14,919	$1,096	100	$1,096	$1,096
1895	13,615	1,114	94	1,185	1,030
1897	16,182	1,073	92	1,166	1,008
1899	19,446	1,009	96	1,051	1,052
1901	23,160	1,040	101	1,030	1,107
1903	23,757	1,067	106	1,007	1,162
1905	25,481	1,065	107	995	1,173
1907	28,947	1,090	115	948	1,260
1909	30,768	1,105	125	884	1,370
1911	36,975	1,109	130	853	1,425
1913	36,289	1,134	141	804	1,545
1915	38,571	1,141	142	804	1,556
1917	45,706	[2] 1,184	206	575	2,258
1919	91,791	[2] 1,321	259	510	2,839
	Increase in average salary, 1919 compared with 1893, 20.53 per cent.				

[1] The Henry award differed from the Macy awards in that the latter dealt with the employees of the privately-owned shipyards working for the Government while the former dealt with Government employees. Its terms demanded higher qualifications in the architects and draftsmen affected than was the case with the Macy awards.

[2] Not including bonus. Exact data on which to compute the average bonus were not available, but the Reclassification Commission Report states (p. 41) that $216 is a fair amount to allow for average bonus in 1919.

It is very evident from this table that in regard to its own employees the Government has given little attention either to the necessity of paying a living wage, or to the desirability of salary revisions to maintain the due relation between compensation and cost of living. If the average salary of $1,096 was fair and reasonable in 1893, the average salary of $1,321 in 1919, representing only half the purchasing value of the salary of 1893, is unfairly and unreasonably low. Nor have the variations which the average shows borne any material relation to the fluctuations in prices. From 1893 to 1911 the average salary varied within a range of only $105, and at the latter date was only $13 higher than at the beginning of the period. Meanwhile retail prices, taking the index figure of 1893 as the base, had fallen to 92 in 1897 and then risen to 130 in 1911. Owing to the fall in prices, the Government employee was for some years relatively better off than he was in 1893, but from 1901 onward his condition grew steadily worse, and from 1915 onward the deterioration was exceedingly rapid. It is true that while the average salary was $1,141 in 1915 it had become $1,321 in 1919, an increase of $180, or 15.8 per cent, but during this same time the index figure of retail prices of food had risen from 142 to 259, an increase of 82.4 per cent. As shown on page 63 of this issue of the REVIEW, retail prices of food in April, 1920, were 113 per cent higher than in June, 1915.

There is always some question as to whether a comparison covering so long a period as shown in this table is entirely fair. The force in 1919 was much larger than in 1893, the range of the Government's activities had been much widened, and there is no assurance that the work done by the typical Government clerk in 1919 was the same in character as it was in 1893. It is sometimes asserted that the demand on the rank and file of the employees is not so great now as it was in the nineties; the work has been much more specialized, with the result, it is said, that the ordinary worker is not required to have as much initiative or as varied abilities as in the earlier days. It is possible that there is some truth in this contention, but there are two facts to be set against it when the adequacy of the present salary scale is under consideration. The scientific work of the Government has been greatly extended since 1893, so that it now employs a much larger force of highly trained scientific and technical experts, who should normally be highly paid men, and whose salaries should tend to bring up the general level. For the rank and file, there has also been a marked increase in the intensity of work required. Hours have been lengthened, privileges curtailed, and much more persistent and strenuous effort required than was the case 27 years ago, when relatively the salary scale was materially higher than now.

Of course it is not possible to say whether these latter considerations exactly counterbalance the first, so it is worth while to examine the salary changes of some smaller groups, selected because in their cases it has been possible to make sure that there has been no material change either in the character of the work done or, usually, in the manner of doing it.

Table 2 shows the average salaries since 1897 for a group in which there has been little change, the assistants in the reading room and catalogue divisions of the Library of Congress.

TABLE 2.—NUMBER AND AVERAGE SALARY OF ASSISTANTS IN THE READING ROOM AND CATALOGUE DIVISIONS OF THE LIBRARY OF CONGRESS, 1897[1] TO 1919, AND PURCHASING POWER OF SALARY IN RELATION TO 1897[1] SALARY.

Year.	Number of employees.	Average salary.	Index of retail prices of food.[2]	Purchasing power of salary in relation to 1897 salary.	Average salary necessary to maintain purchasing power of 1897 salary.
1897[1]	28	$1,200	100	$1,200	$1,200
1898	28	1,200	103	1,165	1,236
1899	48	1,023	105	974	1,260
1900	81	899	106	848	1,272
1901	102	890	111	802	1,332
1902	126	957	115	832	1,380
1903	126	957	116	825	1,392
1904	126	957	117	818	1,404
1905	126	957	117	818	1,404
1906	125	950	122	779	1,464
1907	125	950	126	754	1,512
1908	125	950	129	736	1,548
1909	125	950	137	693	1,644
1910	127	929	143	650	1,716
1911	128	922	142	649	1,704
1912	129	931	151	617	1,812
1913	129	931	154	605	1,848
1914	129	964	157	614	1,884
1915	129	964	156	618	1,872
1916	131	981	175	561	2,100
1917	132	[3] 981	224	438	2,688
1918	134	[3] 982	258	381	3,096
1919	134	[3] 982	283	347	3,396
	Decrease in average salary, 1919 compared with 1897, 18.17 per cent.				

[1] Year organized.
[2] As 1897 is the earliest year for which data as to salaries of Library of Congress employees are available, it was necessary for comparative purposes to use retail prices of food for that year as the base, or 100, in calculating the index numbers shown in this column. These index numbers, therefore, do not agree with the index numbers of prices shown in other tables of this series which are based on prices in 1893=100.
[3] Not including bonus. With bonus average salary was $1,222 in 1919.

The marked drop in the average salary beginning in 1899 was due to the enlargement of the force and the creation of a number of low-salaried positions. Owing to this change, a comparison of 1897 with 1919 may be unfair, but either 1901 or 1902 might legitimately be taken as a basis of comparison. Since 1901 the number of workers has increased by 32, but since 1902 by only 8. Including the bonus, the average salary shows an increase of 37.3 per cent since 1901, and of 27.7 per cent since 1902, while the index figure of retail prices, the figure of 1893 being taken as a basis (see Table 1), has risen from 101 in 1901, and 106 in 1902, to 259 in 1919. The increase in the average salary of these workers comes very close to that for the whole body of workers, as given in Table 1, which shows that the average salary in 1919 amounted to 27 per cent over the average for 1901, and 23.8 per cent over that for 1903. The average salary of the library assistants in 1919, however, would be lower than the figure here given were it not that at the present time a number of the more poorly paid positions are vacant, it being impossible to secure workers at the salaries they carry.

Tables 3 and 4, dealing with the hydrographic and geodetic engineers, and the naval architects and draftsmen, present an interesting contrast, showing how largely the Government is influenced in its treatment of salaries by outside conditions.

TABLE 3.—NUMBER AND AVERAGE SALARY OF HYDROGRAPHIC AND GEODETIC ENGINEERS OF COAST AND GEODETIC SURVEY, 1893 TO 1919, AND PURCHASING POWER OF SALARY IN RELATION TO 1893 SALARY.

Year.	Number of employees.	Average salary.	Index of retail prices of food.	Purchasing power of salary in relation to 1893 salary.	Average salary necessary to maintain purchasing power of 1893 salary.
1893	55	$2,065	100	$2,065	$2,065
1894	46	2,028	96	2,113	1,982
1895	42	2,033	94	2,163	1,941
1896	42	2,033	92	2,210	1,900
1897	42	2,033	92	2,210	1,900
1898	48	1,889	94	2,010	1,941
1899	61	1,788	96	1,863	1,982
1900	62	1,798	97	1,854	2,003
1901	77	1,588	101	1,572	2,086
1902	77	1,588	106	1,498	2,189
1903	77	1,588	106	1,498	2,189
1904	81	1,579	107	1,476	2,210
1905	81	1,579	107	1,476	2,210
1906	81	1,622	111	1,461	2,292
1907	93	1,619	115	1,408	2,375
1908	93	1,619	118	1,372	2,437
1909	93	1,619	125	1,295	2,581
1910	93	1,653	131	1,263	2,705
1911	93	1,658	130	1,275	2,685
1912	93	1,658	138	1,201	2,850
1913	93	1,658	141	1,176	2,912
1914	93	1,658	144	1,151	2,974
1915	99	1,703	142	1,199	2,932
1916	104	1,720	161	1,068	3,325
1917	124	[1] 1,754	206	851	4,254
1918	124	[1] 1,754	237	740	4,894
1919	140	[1] 1,835	259	708	5,348
		Decrease in average salary, 1919 compared with 1893, 12.53 per cent.			

[1] Not including bonus; figures not available.

TABLE 4.—NUMBER AND AVERAGE SALARY OF NAVAL ARCHITECTS AND DRAFTSMEN BUREAU OF CONSTRUCTION AND REPAIR, NAVY DEPARTMENT, 1893 TO 1919, AND PURCHASING POWER OF SALARY IN RELATION TO 1893 SALARY.

Year.	Number of employees.	Average salary.	Index of retail prices of food.	Purchasing power of salary in relation to 1893 salary.	Average salary necessary to maintain purchasing power of 1893 salary.
1893	34	$1,492	100	$1,492	$1,492
1894	.....	.....	96	.....	1,432
1895	.....	.....	94	.....	1,402
1896	42	1,506	92	1,637	1,373
1897	.....	.....	92	.....	1,373
1898	.....	.....	94	.....	1,402
1899	.....	.....	96	.....	1,432
1900	42	1,641	97	1,691	1,447
1901	.....	.....	101	.....	1,507
1902	.....	.....	106	.....	1,582
1903	.....	.....	106	.....	1,582
1904	48	1,637	107	1,530	1,596
1905	48	1,609	107	1,504	1,596
1906	44	1,597	111	1,439	1,656
1907	41	1,720	115	1,496	1,716
1908	.....	.....	118	.....	1,761
1909	46	1,689	125	1,351	1,865
1910	47	1,665	131	1,271	1,955
1911	47	1,665	130	1,281	1,940
1912	45	1,727	138	1,251	2,059
1913	47	1,716	141	1,217	2,104
1914	47	1,827	144	1,269	2,148
1915	49	1,798	142	1,266	2,119
1916	76	1,626	161	1,010	2,402
1917	139	[1] 1,552	206	753	3,074
1918	178	[2] 2,032	237	857	3,536
1919	143	[2] 2,498	259	965	3,864
		Increase in average salary, 1919 compared with 1893, 67.43 per cent.			

[1] Not including bonus; figures not available.

[2] Not including bonus. The advance in salary received in 1918 made most of these employees ineligible for the bonus. In 1919 they came under the Henry award, receiving another increase,-but being excluded from the bonus.

In 1893, it will be observed, the hydrographic and geodetic engineers had a considerably better standing than the naval group, their average salary being $2,065 against an average of $1,492 for the architects and draftsmen. From 1898 to 1901 the engineering group was undergoing a process of adjustment, the number being increased and the average salary lowered, but by 1901 both numbers and salary had reached a relatively stationary position. At this time their average salary, $1,588, was somewhat below that of the naval group in 1900, the nearest comparable date, and so it remained until war conditions materially changed the status of the latter. The effect of the war, even before the United States entered it, was to cause a great expansion of the Navy's building program, which necessitated bringing into the service a much larger number of architects and draftsmen than had previously been employed. These, coming in at the entrance rates, lowered the average salary from $1,798 in 1915 to $1,626 in 1916 and $1,552 in 1917. But our entrance into the war created a tremendous demand for these architects and draftsmen, and in order to keep its men at all the Government simply had to raise its scale, so that in 1918 the average became $2,032. The following year the group came under the Henry award, and the average rose to $2,498, an increase of 53.6 per cent over the average of 1916 and of 67.4 per cent over that of 1893. Even this increase, however, fell noticeably below that of the price index figure. Meanwhile, the hydrographic and geodetic engineers fared but poorly. Outside the Government service there is little demand for their kind of work, so that the coming of the war with its accompaniment of soaring prices brought no increased competition for their services. Consequently, no particular attention was paid to their needs, and their basic salary in 1919 was actually lower than in 1893 and only 15.6 per cent higher than in 1901, the year in which the process of readjustment of numbers and salaries might be looked upon as complete.

Both of these groups—the engineers and the architects—are composed of skilled and trained men. Neither received increases of salary proportionate to the increased cost of living, but the difference in their relative positions in 1919 is a striking commentary on the lack of a governmental policy of salaries. In one case there was strong outside competition for the services of the employees, and the Government accordingly increased salaries; in the other there was no such competition and salaries remained almost unchanged. The relation of the salaries to the cost of living or to the skill and training required of the worker apparently played no part in either case.

Table 5 shows the average salaries of the adjudicating clerks of the General Land Office. The duties of this group have been practically the same for the past 27 years.

TABLE 5.—NUMBER AND AVERAGE SALARY OF ADJUDICATING CLERKS, GENERAL LAND OFFICE, INTERIOR DEPARTMENT, 1893 TO 1919, AND PURCHASING POWER OF SALARY IN RELATION TO 1893 SALARY.

Year.	Number of employees.	Average salary.	Index of retail prices of food.	Purchasing power of salary in relation to 1893 salary.	Average salary necessary to maintain purchasing power of 1893 salary.
1893	179	$1,473	100	$1,473	$1,473
1894	179	1,473	96	1,534	1,414
1895	182	1,451	94	1,544	1,385
1896	187	1,440	92	1,565	1,355
1897	187	1,440	92	1,565	1,355
1898	185	1,437	91	1,529	1,385
1899	188	1,424	96	1,483	1,414
1900	189	1,428	97	1,472	1,429
1901	189	1,428	101	1,414	1,488
1902	188	1,436	106	1,355	1,561
1903	193	1,434	106	1,353	1,561
1904	196	1,445	107	1,350	1,576
1905	191	1,454	107	1,359	1,576
1906	187	1,469	111	1,323	1,635
1907	187	1,471	115	1,279	1,694
1908	178	1,498	118	1,270	1,738
1909	183	1,515	125	1,212	1,841
1910	182	1,522	131	1,162	1,930
1911	177	1,540	130	1,185	1,915
1912	177	1,540	138	1,116	2,033
1913	176	1,544	141	1,095	2,077
1914	174	1,551	144	1,077	2,121
1915	180	1,547	142	1,089	2,092
1916	172	1,566	161	973	2,372
1917	162	[1] 1,585	206	769	3,034
1918	173	[1] 1,553	237	655	3,491
1919	170	[1] 1,571	259	606	3,815
		Increase in average salary, 1919, compared with 1893, 6.65 per cent.			

[1] Not including bonus. With bonus average salary was $1,649 in 1917, $1,673 in 1918, and $1,811 in 1919.

The group shows singularly little change, either in numbers or in salary, since 1893, the number of employees having decreased by nine, and the average basic salary having risen by $98 in the period covered. This increase is due partly to a slightly higher minimum salary, and partly to the fact that the lower-paid positions are only partially filled, it being impossible to get a full complement of workers at the salaries offered. Including the bonus, the average salary of this group shows almost exactly the same increase over that of 1893 as is shown in Table 1 for the Government employees as a whole—22.9 per cent against 20.5 per cent.

Table 6 shows the average salaries of the geologists of the Geological Survey. The fact that the average salary in 1893 was well over $2,000 is a strong indication of the value set upon their services at that time. The importance of their work has not declined, but the increase in the average salary is small, and is partly due to the separation of the lower-paid men from the service. The demand for geologists outside the Federal service is increasing, but has not yet become sufficiently direct and pronounced to raise Government salaries as it did in the case of the naval architects.

Tables 7 and 8, dealing with the compositors and pressmen of the Government Printing Office, are interesting as showing the influence of outside demand, which in its turn is obliged to meet the conditions decided upon by a strong union.

TABLE 6.—NUMBER AND AVERAGE SALARY OF GEOLOGISTS, UNITED STATES GEOLOGICAL SURVEY, INTERIOR DEPARTMENT, 1893 TO 1919, AND PURCHASING POWER OF SALARY IN RELATION TO 1893 SALARY.

Year.	Number of employees.	Average salary.	Index of retail prices of food.	Purchasing power of salary in relation to 1893 salary.	Average salary necessary to maintain purchasing power of 1893 salary.
1893	24	$2,283	100	$2,283	$2,283
1894	31	2,036	96	2,121	2,192
1895	33	2,079	94	2,166	2,146
1896	35	2,069	92	2,249	2,100
1897	33	2,178	92	2,367	2,100
1898	33	2,287	94	2,433	2,146
1899	33	2,387	96	2,486	2,192
1900	40	2,164	97	2,231	2,215
1901	54	1,967	101	1,948	2,306
1902	54	2,057	106	1,941	2,420
1903	57	2,122	106	2,002	2,420
1904	75	2,002	107	1,871	2,443
1905	73	2,050	107	1,916	2,443
1906	78	2,235	111	2,014	2,534
1907	105	1,929	115	1,677	2,625
1908	109	1,861	118	1,577	2,694
1909	106	2,066	125	1,653	2,854
1910	107	2,096	131	1,600	2,991
1911	111	2,123	130	1,633	2,968
1912	114	2,167	138	1,570	3,151
1913	120	2,191	141	1,554	3,219
1914	122	2,255	144	1,566	3,288
1915	126	2,233	142	1,573	3,242
1916	119	2,410	161	1,497	3,676
1917	115	[1] 2,470	206	1,199	4,703
1918	113	[1] 2,601	237	1,097	5,411
1919	108	[1] 2,733	259	1,055	5,913
		Increase in average salary, 1919, compared with 1893, 19.7 per cent.			

[1] Not including bonus. With bonus average salary was $2,482 in 1917, $2,663 in 1918, and $2,858 in 1919.

TABLE 7.—NUMBER AND AVERAGE SALARY OF COMPOSITORS, GOVERNMENT PRINTING OFFICE, 1893 TO 1919, AND PURCHASING POWER OF SALARY IN RELATION TO 1893 SALARY.

Year.	Number of employees.	Average salary.	Index of retail prices of food.	Purchasing power of salary in relation to 1893 salary.	Average salary necessary to maintain purchasing power of 1893 salary.
1893	916	$1,002	100	$1,002	$1,002
1894	920	1,002	96	1,042	962
1895	749	1,002	94	1,066	942
1896	771	1,002	92	1,089	922
1897	778	1,002	92	1,089	922
1898	961	1,002	94	1,066	942
1899	970	1,252	96	1,304	962
1900	990	1,252	97	1,291	972
1901	1,147	1,252	101	1,240	1,012
1902	1,117	1,252	106	1,181	1,062
1903	1,040	1,252	106	1,181	1,062
1904	1,023	1,252	107	1,170	1,072
1905	816	1,252	107	1,170	1,072
1906	600	1,252	111	1,128	1,112
1907	498	1,252	115	1,089	1,152
1908	427	1,252	118	1,061	1,182
1909	425	1,252	125	1,002	1,253
1910	418	1,252	131	956	1,313
1911	421	1,252	130	963	1,303
1912	401	1,252	138	907	1,383
1913	395	1,252	141	888	1,413
1914	338	1,252	144	869	1,443
1915	343	1,252	142	882	1,423
1916	335	1,252	161	778	1,613
1917	377	[1] 1,252	206	608	2,064
1918	330	[1] 1,502	237	634	2,375
1919	446	[1] 1,878	259	725	2,595
		Increase in average salary, 1919, compared with 1893, 87.42 per cent.			

[1] Not including bonus. With bonus average salary was $2,118 in 1919; average for 1917 and 1918 not computed.

TABLE 8.—NUMBER AND AVERAGE SALARY OF PRESSMEN, GOVERNMENT PRINTING OFFICE, 1893 TO 1919, AND PURCHASING POWER OF SALARY IN RELATION TO 1893 SALARY

Year.	Number of employees.	Average salary.	Index of retail prices of food.	Purchasing power of salary in relation to 1893 salary.	Average salary necessary to maintain purchasing power of 1893 salary.
1893	68	$1,002	100	$1,002	$1,002
1894	58	1,002	96	1,042	962
1895	63	1,252	94	1,332	942
1896	72	1,252	92	1,361	922
1897	88	1,252	92	1,361	922
1898	89	1,252	94	1,332	942
1899	86	1,252	96	1,304	962
1900	85	1,252	97	1,291	972
1901	91	1,252	101	1,240	1,012
1902	98	1,252	106	1,181	1,062
1903	125	1,252	106	1,181	1,062
1904	118	1,252	107	1,170	1,072
1905	100	1,252	107	1,170	1,072
1906	99	1,252	111	1,128	1,112
1907	108	1,252	115	1,089	1,152
1908	126	1,252	118	1,061	1,182
1909	125	1,252	125	1,002	1,253
1910	128	1,252	131	956	1,313
1911	120	1,252	130	963	1,303
1912	125	1,377	138	998	1,383
1913	129	1,377	141	977	1,413
1914	127	1,377	144	956	1,443
1915	124	1,377	142	970	1,423
1916	126	1,377	161	855	1,613
1917	202	[1] 1,377	206	668	2,064
1918	192	[1] 1,628	237	687	2,375
1919	206	[1] 1,878	259	725	2,595
		Increase in average salary, 1919, compared with 1893, 87.42 per cent.			

[1] Not including bonus. With bonus average salary was $2,118 in 1919; average for 1917 and 1918 not computed.

It will be noticed that between 1902 and 1908 the compositors show a marked falling off in numbers, and that from the latter date onward there is relatively little variation in this respect. This change was due to the introduction of typesetting machines, by which much the greater part of the typesetting is now done. Nevertheless, some kinds of typesetting are still done by hand, and in order to make a fair comparison, the salary figures have been limited to those who were kept on at this handwork. In the years when the change to the machines was being made the number of the handworkers naturally declined rapidly, but this was the only change in the group, the work done having remained the same throughout the period covered. The pressmen show the same stability as the compositors in character of work done. The presses of to-day are larger, have more cylinders and run at greater speed, but the kind and degree of skill required of the pressmen are the same.

For these two groups, then, the character of work done has remained absolutely unchanged since 1893, and up to 1917 the same might almost be said of their wages. For the compositors the average salary remained stationary from 1899 to 1917; for the pressmen there was a slight increase in 1912, after which the salary was unchanged until 1918. In the case of both groups, however, the Government has been obliged within the last few years to meet strong outside competition, and as the only apparent means of keeping up the force in the Government Printing Office the union

wage scale was adopted. As a result, these two groups, both receiving the scale of wages that prevails outside, show a greater percentage increase than any of the others considered.

Table 9 brings together the average salaries of groups previously considered and several others not yet mentioned, showing the degree to which the average salary has been increased since 1893, and its level at four different periods.

TABLE 9.—AVERAGE SALARIES OF TYPICAL GROUPS, VARIOUS FISCAL YEARS, 1893-4 TO 1919-20.

Group.	1893–4		1906–7		1916–17		1919–20			
								Average salary.		
									With bonus.	
	Number of employees.	Average salary.	Number of employees.	Average salary.	Number of employees.	Average salary.	Number of employees.	Without bonus.	Amount.	Per cent of increase over 1893.
Clerical services.										
Clerks (General Land Office, Interior Department)	116	$1,188	177	$1,199	261	$1,124	288	$1,193	$1,432	20.54
Adjudicating clerks (General Land Office, Interior Department)	179	1,473	187	1,469	172	1,566	170	1,571	1,811	22.94
Clerks (all divisions, Post Office Department)	443	1,279	839	1,223	938	1,284	996	1,349	1,589	24.24
Clerks (Coast and Geodetic Survey, Department of Commerce)	33	1,049	34	1,098	39	1,125	42	1,131	1,371	21.16
Copyright clerks (Library of Congress)	[1] 29	[1] 1,153	64	1,102	83	1,144	83	1,143	1,383	[2] 19.95
Assistants (reading room and catalogue division, Library of Congress)	[1] 28	[1] 1,200	125	950	131	981	134	982	1,222	[2] 1.83
Scientific and technical services.										
Geologists (Geological Survey, Interior Department)	24	2,283	78	2,235	119	2,410	108	2,733	2,858	25.19
Physicists (Bureau of Standards, Department of Commerce)	.....	.....	35	1,466	98	1,580	118	1,741	[3] 1,741	[3] 18.76
Cadastral engineers (General Land Office, Interior Department)	8	1,513	8	1,725	18	1,642	13	1,788	2,010	32.85
Cartographic engineers (Coast and Geodetic Survey, Department of Commerce)	16	1,494	19	1,489	22	1,670	27	1,593	1,833	22.69
Architectural draftsmen (Supervising Architect's Office, Treasury Department)	50	1,630	51	1,446	54	1,669	38	1,934	2,174	33.37
Engravers (Coast and Geodetic Survey, Department of Commerce)	10	1,680	19	1,384	20	1,550	20	1,570	1,810	7.74
Naval architects and draftsmen (Bureau of Construction and Repair, Navy Department)	34	1,492	44	1,597	76	1,626	143	2,498	[4] 2,498	[4] 67.43
Printing trades.										
Pressmen (Government Printing Office)	68	1,002	99	1,252	126	1,377	206	1,878	2,118	111.38
Compositors (Government Printing Office)	916	1,002	600	1,252	335	1,252	446	1,878	2,118	111.38

[1] Figures are for 1897, date of organization.
[2] Per cent of increase over 1897.
[3] Not including bonus; figures not available.
[4] Not including bonus figures; bonus not allowed.

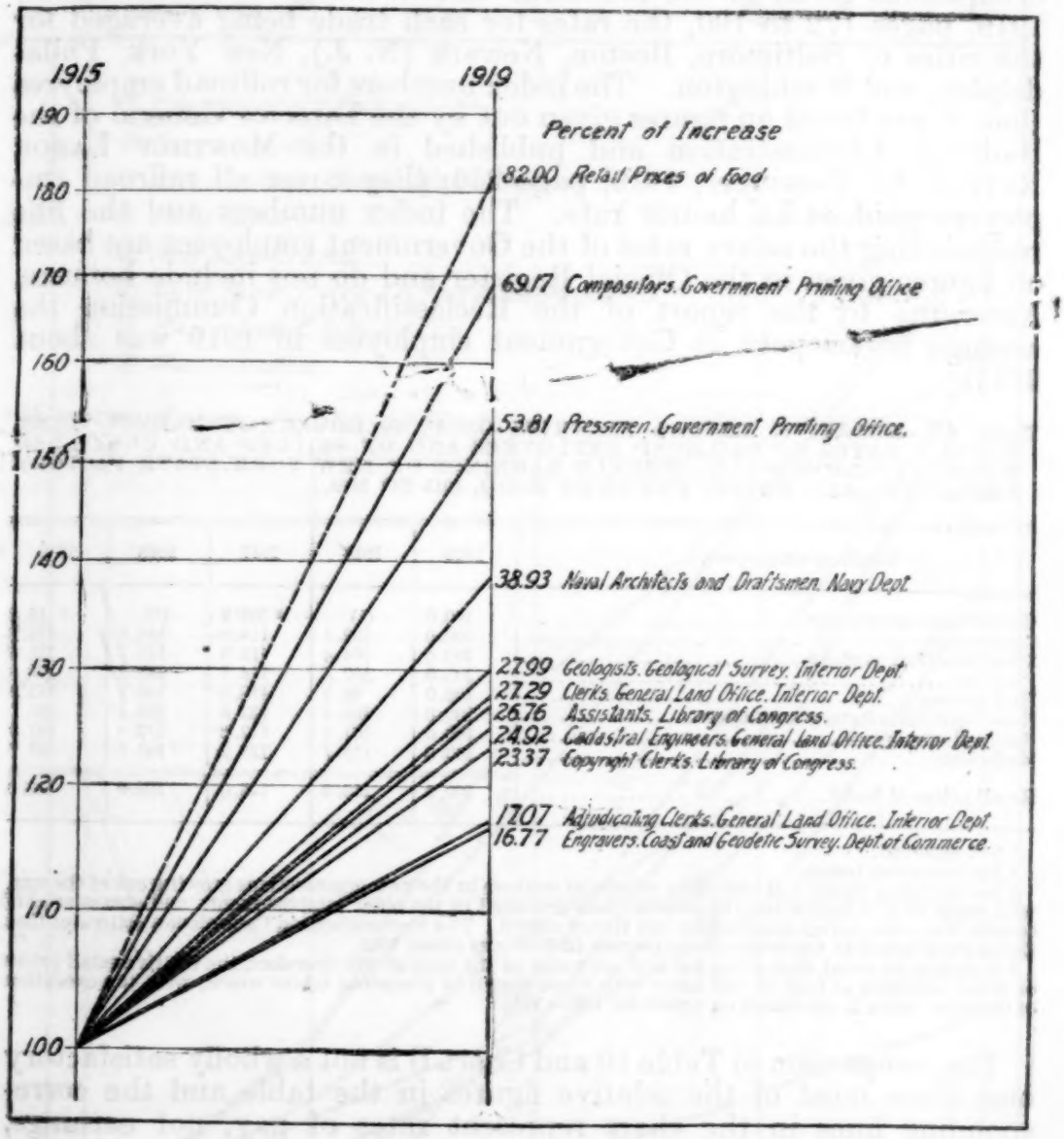
It will be noticed that all of the groups, after they had passed through an organization or reorganization period, tended to become nearly stationary, both as to numbers and salary, until the outbreak of the war brought about changes in most, though not quite all, of them. It is evident that the increases in salary shown have no general underlying principle, and have not been made in accordance with any clearly defined policy. The salary advances received differ considerably from group to group, and are very much higher for the groups representing skilled labor than for those in the clerical and the scientific and technical services. Excluding the copyright clerks and assistants of the Library of Congress, since for them the period of comparison should really begin with the present century, the increases shown for the clerical groups range from 20.54 per cent to 24.24 per cent. In the scientific and technical services, excluding the one group over which the Government came into direct competition with outside employers the range is from 7.74 per cent to 33.37 per cent; including that group, to 67.43 per cent. The two groups from the Government Printing Office, who received the full benefit of outside competition, show an increase of 111.38 per cent. Meanwhile, retail prices show an increase during the period of 159 per cent.

It will be seen that the salaries of these groups, selected for study because it was definitely known that the character of their work had not changed materially in the period covered, do not support the theory that the fall in the real value of the average salary of the Government employees as a body corresponds to a lower standard of requirements which justifies the decrease. But to test the matter still further, another comparison was made. It will hardly be said that the Government's demands, in those bureaus and divisions existing before the war, have altered materially within the past five years, and that its employees deserve relatively a much lower salary to-day than they received in 1915. Yet the purchasing power of their salaries has fallen materially since 1915, as shown in the following chart, which shows for a number of groups of Government employees the salary increases since 1915 as compared with the increase in retail prices of food.

Here, again, there is clear evidence of the lack of any policy underlying the changes. Evidently the increases have not been planned to compensate for the increasing price of food, for in only two cases is the percentage increase in salary even half as great as that in food prices. And they can not have been proportioned to the value of the services rendered, or the compositors and the pressmen would not show such a large percentage increase, and these two would not lead the rest so distinctly. The only conclusion that can be drawn from these varied rates of increase is that the Government raises salaries only when it is forced to do so in order to keep its employees, and then only so far as will enable it to withstand outside competition. When there is no such competition, as, for instance, when the Government is the only employer for some line of scientific or technical work and there is therefore little chance for the worker outside, salaries tend to remain stationary, or are advanced slowly and uncertainly to an extent which is wholly insufficient to meet the increase in the cost of living. This policy of

drift is the more easily followed because Government employees have never shown any inclination to strike, have only recently organized themselves into a union, and have made it one of the basic principles of that union that they shall neither themselves strike nor be called upon to support any strike against the Government.

CHART A.—INCREASE, 1915-1919, IN AVERAGE SALARY OF SPECIFIED GROUPS OF GOVERNMENT EMPLOYEES COMPARED WITH INCREASE IN RETAIL PRICES OF FOOD. AVERAGES INCLUDE BONUS.



Government Salaries Compared with Wages in Industry.

HOW THE Government employee fares as compared with workers outside the service is revealed to some extent in Table 10 and Chart B, which show the relative increases secured since 1915 by the Government force as a whole, and by certain classes of skilled and unskilled workers outside. In this table and chart the index numbers and the line representing retail prices of food are based on figures furnished by the United States Bureau of

Labor Statistics. The index numbers and the line representing average earnings in New York State factories are based on the average weekly earnings as given in the Labor Market Bulletin published by the Bureau of Statistics of the New York State Industrial Commission for January, 1919, page 8. The index numbers for carpenters, hod carriers, machinists, painters, and structural iron workers (lines 3, 4, 5, 6, and 7) are based on the union rates for these occupations given in the MONTHLY LABOR REVIEW for November, 1919, pages 172 to 190, the rates for each trade being averaged for the cities of Baltimore, Boston, Newark (N. J.), New York, Philadelphia, and Washington. The index numbers for railroad employees (line 2) are based on figures given out by the Director General of the Railroad Administration and published in the MONTHLY LABOR REVIEW for December, 1919, page 230; they cover all railroad employees paid at an hourly rate. The index numbers and the line representing the salary rates of the Government employees are based on figures given in the Official Register and do not include bonuses. According to the report of the Reclassification Commission the average bonus paid to Government employees in 1919 was about $215.

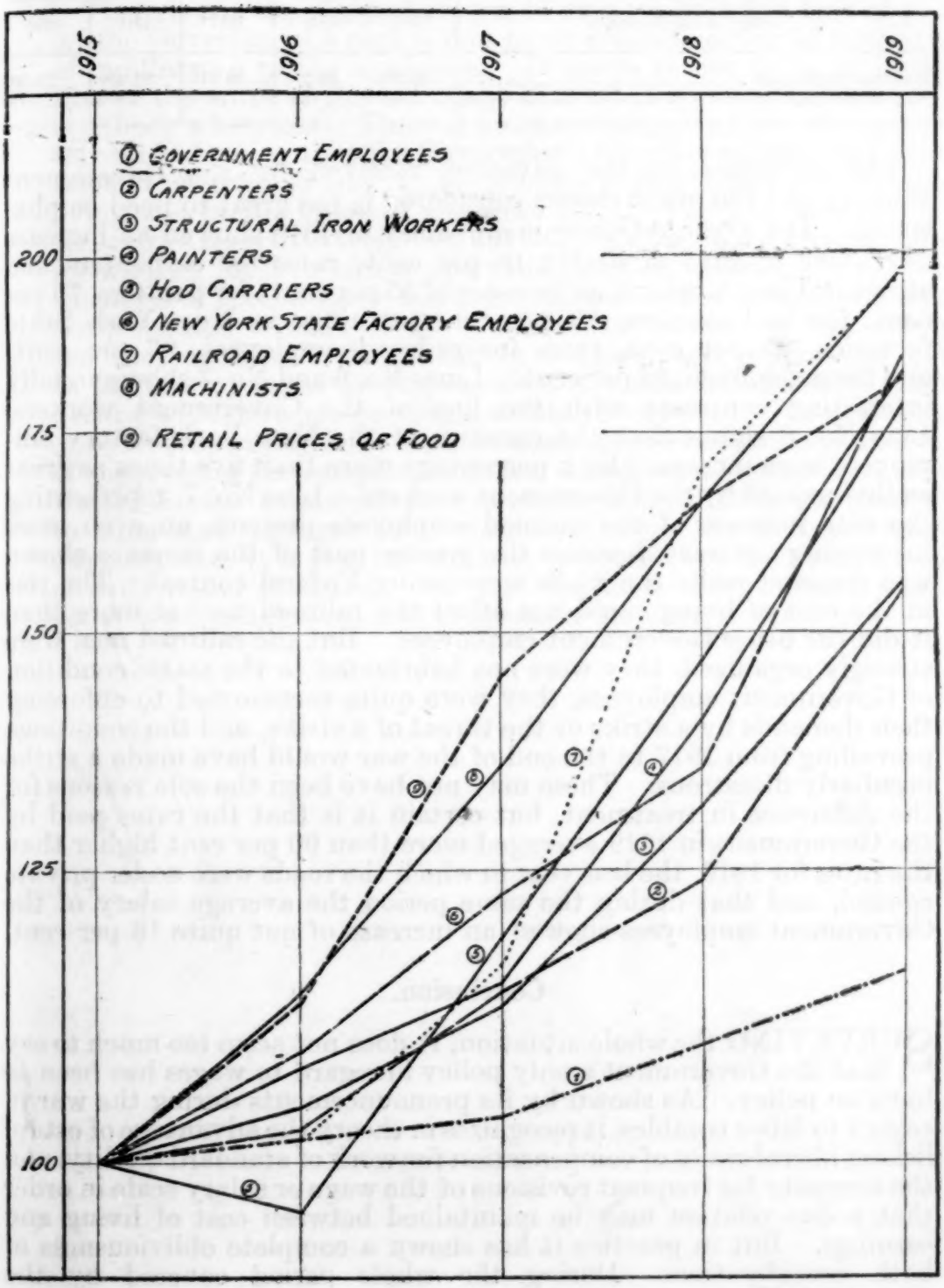
TABLE 10.—RELATIVE ANNUAL SALARIES OF U. S. GOVERNMENT EMPLOYEES, HOURLY RATES OF RAILROAD EMPLOYEES AND OF SKILLED AND UNSKILLED WORKERS (UNION SCALE), WEEKLY EARNINGS OF NEW YORK STATE FACTORY EMPLOYEES, AND RETAIL PRICES OF FOOD, 1915 TO 1919.

Group of employees.	1915	1916	1917	1918	1919
Government employees	100.0	(1)	[2] 103.8	(1)	[3] 115.8
Carpenters	100.0	102.6	114.0	124.1	155.2
Structural iron workers	100.0	104.4	112.8	131.7	155.6
Painters	100.0	107.5	114.7	140.3	178.8
Hod carriers	100.0	96.3	118.9	146.7	182.9
New York State factory employees	100.0	108.8	122.8	135.1	185.1
Railroad employees	100.0	101.9	117.8	170.0	197.0
Machinists	100.0	113.7	135.2	166.0	197.7
Retail prices of food [4]	100.0	113.0	145.0	166.0	182.0

[1] Not reported.
[2] Not including bonus.
[3] Not including bonus but including salaries of workers in the new organizations growing out of the war, who came in at a higher level of salaries than prevailed in the older establishments, and also salaries of certain Navy employees adjusted by the Henry award. The Reclassification Commission estimates that the average bonus of Government employees in 1919 was about $215.
[4] It should be noted that prices for 1915 are taken as the base or 100; therefore, the relative retail prices or index numbers of food do not agree with those shown in preceding tables which, with the exception of those in Table 2, are based on prices for 1893=100.

The comparison in Table 10 and Chart B is not a wholly satisfactory one, since most of the relative figures in the table and the corresponding lines in the chart represent rates of pay, not earnings, whereas the line for the Government employees, whose salary is on a yearly basis, represents earnings as well as rates. Against this may be set the fact that during the last two years of the period covered, during which the increase in rates is particularly marked, there was a scarcity of workers, so that unemployment was rare, and overtime, generally at increased rates, was common. Owing to these conditions, the discrepancy between rates and earnings was diminished if not wholly overcome. Also, line No. 6, showing earnings, is strictly comparable with the line showing increases received by the Government employees. It must be remembered that the relative figures

CHART B.—INCREASE, 1915–1919, IN AVERAGE SALARY OF GOVERNMENT EMPLOYEES, COMPARED WITH INCREASE IN RETAIL PRICES OF FOOD, EARNINGS IN NEW YORK STATE FACTORIES, AND WAGE RATES OF CERTAIN SKILLED AND UNSKILLED WORKMEN.



while showing percentage increases, show nothing as to the absolute condition of the recipients. For instance, the percentage of increase between 1915 and 1919 is almost identical for the railroad employees and the machinists, but the actual average hourly rates for the two groups during this period were as follows:

Group of employees.	1915	1916	1917	1918	1919
Railroad employees	$0.270	$0.275	$0.318	$0.459	$0.532
Machinists	.359	.408	.486	.596	.710

The difference in the advances received by the Government workers and the other classes considered is too great to need emphasizing. The average Government salary of 1919 showed an increase over that of 1915 of nearly 16 per cent; rates for carpenters and structural-iron workers, an increase of 55 per cent; for painters, 79 per cent; for hod carriers, 83 per cent; earnings in New York State factories, 85 per cent; rates for railroad employees, 97 per cent; and for machinists, 98 per cent. Lines No. 6 and No. 7 show specially interesting contrasts with the line of the Government workers. Line No. 6 shows that the earnings of the New York factory employees were increased by a percentage more than five times as great as that gained by the Government workers. Line No. 7, representing the rate increase of the railroad employees presents an even more interesting contrast, because the greater part of the increase shown was received while the roads were under Federal control. The rise in the cost of living could not affect the railroad worker more than it did the other Government employees. But the railroad men were strongly organized, they were not habituated to the static condition of Government employees, they were quite accustomed to enforcing their demands by a strike or the threat of a strike, and the conditions prevailing from 1917 to the end of the war would have made a strike peculiarly disastrous. These may not have been the sole reasons for the difference in treatment, but certain it is that the rates paid by the Government in 1919 averaged more than 90 per cent higher than the rates for 1916, the last year in which the roads were under private control, and that during the same period the average salary of the Government employees showed an increase of not quite 16 per cent.

Conclusion.

SURVEYING the whole situation, it does not seem too much to say that the Government's only policy in regard to wages has been to have no policy. As shown by its pronouncements during the war in regard to labor troubles, it recognizes in theory the advantage of establishing liberal scales of compensation for work of standard quality, and the necessity for frequent revisions of the wage or salary scale in order that a due relation may be maintained between cost of living and earnings. But in practice it has shown a complete obliviousness of both considerations. During the whole period covered by the accompanying charts, there has been no general revision of the salary scale, and such advances as have been made have varied

according to the degree of pressure which the employees or outside circumstances have brought to bear upon the Government. The advances have never been proportioned to the increased cost of living except in the one case of the railroad employees, where the Government was dealing with a strongly organized body, able to enforce its claims by drastic action and quite prepared to do so.

There is not the slightest reason to suppose that this lack of policy on the Government's part is due to an attitude either of hostility or of indifference to the employees. It seems rather to be an illustration of the truth of the old adage that what is everybody's business is nobody's business. There is no one responsible body charged with the duty of seeing that the Government pays fair salaries and adjusts them from time to time in accordance with changes in the cost of living and in the value of the work done. The final responsibility for salaries rests with Congress, but Congress has no definite machinery for keeping itself informed upon the question. Generally speaking, whenever a special body has been created to deal with questions of compensation outside of the Government service, it has shown a tendency to handle the matter in a liberal and progressive spirit. Is there any reason to suppose that it would be otherwise were it dealing with the same questions within the service? If a commission or other responsible body were created, charged with the special duty of supervising the compensation and employment conditions of the United States' employees and recommending to Congress from time to time such changes as it considered were required by changing circumstance, it is not too much to suppose that the present policy of drift would disappear, and that the Government would take its place as an enlightened and progressive employer.

Mobility of Labor in American Industry.[1]

By PAUL F. BRISSENDEN and EMIL FRANKEL.

THE difficulty of maintaining a stable work force in industrial establishments has directed attention to the problem of labor instability—a phenomenon observable in a particularly intensified form in times of prosperity, but found to be only slightly less serious even in periods of depression. Labor instability is regarded by all those who have given any serious consideration to the problem as one of the maladjustments of our industrial life, wasteful and destructive of the potential man power of the Nation and a serious obstacle to the complete utilization of the country's productive forces. In tackling this problem it should be recognized at the outset that within certain limits establishment labor mobility is a normal and necessary thing. A certain amount of shifting from shop to shop and city to city is quite normal and even desirable; part of this necessary movement of labor is an entirely natural ebb and flow resulting from the normal expansion and contraction of industrial activity. Interest in the question of labor mobility is centered, therefore, not only upon its general extent but more specifically upon whatever part of it may be considered abnormal and unnecessary. When it is considered from this standpoint it is essential to know (1) the nature and extent of labor instability, (2) the various factors which are likely to increase or diminish its volume, and (3) whether any employment methods have been or can be devised which will make it possible to reduce labor instability to such an extent that maximum production may be attained at minimum cost and to the mutual advantage of employer and employee.

In order, however, to give really adequate consideration to the various problems involved in labor instability as it affects different industries in the United States, and more particularly to devise methods for its reduction, it will be necessary to have more detailed and extensive data than have hitherto been available. Fortunately during the last decade a number of progressive firms have given rather close study to the whole problem of labor instability, have made extensive experiments in labor management with a view to stabilizing the work force, and have achieved a measure of success. It is upon data from such establishments that the analytical and descriptive matter of the forthcoming report is very largely based.

Labor instability is generally the consequence of (1) seasonal, cyclical and other fluctuations in industrial activity which result in varying amounts of employment available to the job seeker; (2) individual or collective dissatisfaction with the conditions of employment; and (3) the dissatisfaction of employers with the services of some employees. In its relation to employer and employee this problem of labor instability becomes a more or less personal one and presents itself essentially in two aspects, depending upon whether it is the employee or employer who is concerned: (1) To the individual workman job changing may mean either gain or loss. In prosperous times, when there are more numerous and attractive job

[1] This article is a summary review of a bulletin on this subject soon to be published by the Bureau of Labor Statistics.

opportunities, the change of jobs may represent an actual gain to the worker. Even if there is nothing gained by it it could hardly involve a loss, because in a rising market jobs are likely to be actually awaiting the separating employee and even at the worst the period of unemployment between jobs is likely to be relatively short. In periods of depression the establishment labor mobility problem is for the individual employee a problem of unemployment or irregular employment, the employee becoming the unwilling sufferer from the instability and less commonly the willing cause of it. (2) The individual employer, however, is chiefly interested in the maintenance of a stable working force and regards excessively numerous terminations of employment and, especially, voluntary and more or less avoidable separations as a serious obstacle to efficient and continuous operation. He is also very much concerned with the enormous expense to which he is put because of the excessive labor replacement required for the maintenance of his normal work force.

In the forthcoming report, as well as in this article, the problem of labor instability is taken up, primarily, from the standpoint of the individual establishment. This is done not because labor mobility from the standpoint of the individual workman is less deserving of consideration, but solely because, as has been explained, the data necessary to the study of this subject were readily available only from the records of those establishments which have made serious attempts to cope with the problem of instability.

The objects of the investigation were: (1) To show the general extent of labor mobility in industrial establishments in the United States from 1910 to 1920; (2) to indicate the relative extent of labor mobility in the various industries and localities and in different subdivisions of the work force; (3) to show the relative stability of the work force in those establishments which have been noticeably successful in dealing with the problem of labor instability as compared with the labor instability prevailing in the general run of establishments reporting; and (4), by describing the employment methods used by those establishments which have been most successful in reducing the number of their labor changes, to demonstrate the practical effectiveness of certain labor policies and well-conceived systems of labor management, including general personnel and welfare activities.

Definition and Measurement of Labor Mobility.

ANY adequate comparison of establishment experience in dealing with labor instability, as well as any clear presentation of the relative extent of that instability in different plants, makes a uniform use of terms and a uniform standard of measurement absolutely necessary. The complex problem of labor instability can not be adequately or clearly presented by use of a phrase of such necessarily narrow and specialized connotation as "labor turnover," which has hitherto been loosely used in reference to establishment labor instability generally. It has been decided to use the term "labor turnover" in one sense and one only, and that strictly in reference to the extent of shift and replacement necessary for maintenance of force. This aspect of the matter is the one with which employers

of labor are most intimately concerned. For use in reference to the larger aspect of the flow of industrial workers into and out of industrial establishments, of which labor turnover or replacement is only one phase, a more inclusive term needs to be used. The whole phenomenon of the movement of labor into and out of industrial establishments is referred to here as "labor mobility."[2] "Labor turnover," as just explained, is used strictly and solely in reference to replacements. Those hired are referred to as "accessions." Those leaving service, under whatever circumstances, are referred to as "separations." Whichever one of these two items—accessions or separations—is the smaller may conveniently be taken as measuring the number of replacements. The total number of labor changes—that is to say, the sum of the accessions and separations—is the "labor flux." The amount by which the accessions in an expanding business are in excess of the separations is the amount of "labor increase." The amount by which the separations in a plant which is curtailing operations exceed the accessions is the amount of "labor decrease."[3]

The exact method of measuring labor mobility as adopted by the Bureau in the forthcoming report may be briefly outlined as follows: The general extent of labor mobility is statistically determined by comparing the labor flux—that is, the total movement of labor in and out (accessions and separations)—during any given period with the number of labor hours put in by the work force during that period. This flux rate is believed to be the best single index figure to use in showing the general stability situation in any plant or group of plants and in subdivisions within individual establishments. The flux rate is made up of the accession rate and the separation rate. The two latter rates should be shown separately in order to reveal the whole stability situation. The rate of replacement, or "turnover," which means the rate at which separating employees whose places must be filled are replaced by others, may be, for all practical purposes, defined as, and identified with, the rate of separation when that rate is lower than the accession rate and as the rate of accession when that rate is lower than the separation rate. Furthermore, the separation rate should be subdivided so as to show the relative responsibility of discharges, lay-offs, and quits for the total labor outflow. The more important mobility rates may be classified as follows:

- Labor mobility rates
  - flux rate
    - accession rate.
    - separation rate
      - quitting rate.
      - discharge rate.
      - lay-off rate.
  - replacement (or "turnover") rate.

In the forthcoming bulletin these different mobility rates are shown, with one or two exceptions, as rates per 10,000 labor hours.[4] For illustration: The figures in Table 2 (p. 41) show that during the

[2] The term "labor mobility" primarily connotes movement. From the employer's standpoint, however, it will sometimes be convenient to refer to this condition as "instability," or even to use the word "stability," where that word seems to be appropriate.

[3] The relations between accessions, separations, replacements, and flux may be seen from the tabular presentation of them all in Table 2.

[4] The 10,000-labor-hours base is the one which has recently been adopted by the Bureau of Labor Statistics for the computation of industrial accident frequency and severity rates. (For details see the MONTHLY LABOR REVIEW, January, 1920, pp. 218, 219.)

year ending May 31, 1918, the sum total of accessions and separations for the 176 establishments reporting was 1,244,640. The number of labor hours worked in these plants during this period was 917,703,000. Consequently—

the flux rate is ..... $\frac{1244640 \times 10,000}{917703000} = 13.6$

the accession rate is ..... $\frac{631173 \times 10,000}{917703000} = 6.9$

and the separation rate [5] is ..... $\frac{613467 \times 10,000}{917703000} = 6.7$

The rates for any departmental, occupational, or other subdivision of the work force should be figured in a similar way. Thus, for example, to get the accession rate for a particular department or occupation divide the number hired during the period covered by the number of labor hours worked in the same group during that period and multiply by 10,000.

The relation between the three principal methods which have been used hitherto in labor-turnover computation is shown in the following table:

TABLE 1.—COMPARISON OF THREE METHODS OF MEASURING LABOR MOBILITY.

Year.	Accession.	Separation.	Labor flux.
	Rate per 10,000 labor hours.		
1913–14	3.1	3.3	6.4
1917–18	6.9	6.7	13.6
	Rate per full-year (3,000-hour) worker.		
1913–14	0.9	1.0	1.9
1917–18	2.1	2.0	4.1
	"Percentage of turnover" (Rochester method).		
1913–14	.....	100	.....
1917–18	.....	200	.....

A separation rate of 1.0 per full-year (3,000-hour) worker, as the Bureau of Labor Statistics has lately computed mobility rates, or a separation rate (called according to the Rochester method "percentage of turnover") of 100 per hundred on the work force, as the Bureau formerly figured "turnover," are both equivalent to a separation rate of 3.3 per unit of 10,000 labor hours as used in this report. Conversely, a separation rate of 6.7 per 10,000 labor hours as used in this report is equivalent to a separation rate of 2.0 per full-year worker and to a "percentage of turnover" (Rochester method) of 200. The flux rate for 1913–14 on the new basis explained above is 6.4, which is the same as a flux rate of 1.9 per full-year

[5] It is evident, in this particular example, that the separation rate, being lower than the accession rate, must also be the replacement rate.

worker. Such a rate indicates that during the period under observation the sum total of the number hired and leaving is about equal to twice the number of full-year workers employed.

Scope and Limitations of the Basic Data.

THE forthcoming report is based primarily upon information secured by agents of the United States Bureau of Labor Statistics in the course of two extensive field investigations of the subject; a prewar inquiry made in 1915 and 1916 and reporting in a general way the extent of turnover during the 5-year period 1910–1915 and in more detail for the years 1913 and 1914, both the extent of it and the efforts made to reduce it; and a war-time investigation made in 1918, resulting in an intensive report of the mobility situation for the 12-month period ending May 31, 1918. By the use of material secured by correspondence some of the data from these field investigations have been brought down to the end of 1919. Returns from the two inquiries cover upwards of 260 establishments, employing over 500,000 workers, in 17 of the most important industrial States.

It is not claimed that the figures given in the forthcoming report are necessarily and in all cases representative of American industry as a whole. It is realized that because of the relatively small number of establishments used in this study the various mobility rates shown must be regarded as being merely indicative of the general mobility situation at any given time. But whatever may be the limitations of the figures for the measurement of the amount of labor mobility at any particular time, they may be used with entire confidence in gauging the trend in mobility from season to season and from year to year.

Enormous as is the extent of establishment labor instability indicated by the figures presented, it is fair to assume (and this assumption is supported by a good deal of fragmentary evidence) that the actual situation is even worse. The establishments from which the Bureau of Labor Statistics has secured labor mobility figures have necessarily been the concerns which had the figures to give, that is to say, concerns which had given rather more attention than most firms to their force-maintenance problems. The firms reporting are chiefly concerns which had more or less centralized employment systems and were relatively more successful in the maintenance of a stable work force. In such establishments the instability situation is not likely to be as serious as in the general run of American industrial concerns, which as a rule pay little or no attention to the flow of labor in and out and give little thought to its control.

General Extent of Labor Mobility.[6]

THE enormous proportions that labor mobility may take on will be appreciated from an examination of Table 2 where the combined figures for the years 1910 to 1919 show that, in the estab-

[6] Because of the limited space available only the more important and more general aspects of the subject are considered in this article. Certain phases of the labor mobility problem not touched upon in this article will be dealt with in the forthcoming bulletin; also, some further consideration will begiven to points discussed here only in a very general way. Detailed figures will be presented to show the relative extent of labor mobility in different cities in the United States, the proportions of "necessary" and "unnecessary" mobility and the extent of absenteeism and its relation to labor mobility. There are also included detailed descriptive accounts of the employment methods and personnel activities of a number of the establishments which have been especially successful in dealing with the labor mobility problem.

lishments reporting, the accomplishment of 6,353,046,000 hours of work, which is labor time equivalent to that of 2,117,682 full-year (3,000-hour) workers, entailed 2,564,037 accessions and 2,481,280 separations, or a total of 5,045,317 labor changes. In other words, on the average for each year of the decade, 256,404 accessions, 248,128 separations, or a total of 504,532 labor changes were involved in the maintenance and the necessary enlargement or curtailment of a labor force of 211,768 workers. This means that the maintenance and the necessary expansion or curtailment of the requisite work force involved labor changes considerably more than equivalent to a complete annual overturn of the work force. This is as if during one year all the employees had left their jobs and a complete new set of workpeople had taken their places. It appears, then, that each year on the average the number of persons who quit, who were laid off or were discharged, as well as the number who had to be hired, was much larger than the total number of workers on the force at any one time.

TABLE 2.—LABOR MOBILITY 1910 TO 1919.

[Replacement (or "turnover") numbers and rates are printed in boldfaced type.]

Year.	Number of establishments.	Number of workers.[1]	Total labor hours.	Labor changes.		
				Accessions.	Separations.	Total (flux).
			Number.			
1910	16	85,263	255,789,000	90,408	**86,179**	176,587
1911	24	109,653	328,959,000	**94,029**	96,915	190,944
1912	54	188,363	565,089,000	210,085	**182,287**	392,372
1913	113	399,449	1,198,347,000	541,746	**535,118**	1,076,864
1913–14[2]	84	244,814	734,442,000	**227,008**	243,707	470,715
1914	162	373,287	1,119,861,000	**300,121**	326,755	626,876
1915	51	159,054	477,162,000	122,211	**99,734**	221,945
1916	20	94,803	284,409,000	131,300	**101,102**	232,402
1917	27	58,052	174,156,000	79,287	**74,917**	154,204
1917–18[2]	176	305,901	917,703,000	631,173	**613,467**	1,244,640
1918	29	56,411	169,233,000	97,918	**84,999**	182,917
1919	19	42,632	127,896,000	38,751	**36,100**	74,851
Total		2,117,682	6,353,046,000	2,564,037	**2,481,280**	5,045,317
				Rate per 10,000 labor hours.[3]		
1910				3.5	**3.4**	6.9
1911				**2.9**	2.9	5.8
1912				3.7	**3.2**	6.9
1913				4.5	**4.5**	9.0
1913–14[2]				**3.1**	3.3	6.4
1914				**2.7**	2.9	5.6
1915				2.6	**2.1**	4.7
1916				4.6	**3.6**	8.2
1917				4.6	**4.3**	8.9
1917–18[2]				6.9	**6.7**	13.6
1918				5.8	**5.0**	10.8
1919				3.0	**2.8**	5.8
Total				4.0	**3.9**	7.9

[1] The figures in column headed "Number of workers" in this and following tables in this article are obtained by dividing the total labor hours by 3,000. These figures are given simply to indicate the approximate size of the work force in order to make it possible directly to compare the absolute number of labor changes with the number of employees in the work force.

[2] The figures given for "1913–14" and "1917–18" are from establishments reporting in great detail during the two field investigations of this subject made by the Bureau of Labor Statistics in 1914 and 1918. The time covered by the statistical data from these establishments is a 12-month period ending, usually, about the middle of 1914 and 1918, respectively. This applies to the material shown for these dates throughout this article.

[3] Computed, as already explained, by dividing the labor-change numbers by the total number of labor hours and multiplying by 10,000.

An examination of the rate figures of Table 2 (bearing in mind the fact that a flux rate of 6.6 represents a complete overturn of force) will show that in 6 of the 10 calendar years represented the number of labor changes in the plants reporting has been more than equivalent to a complete overturn of the work force; that is, there were at least as many accessions and at least as many separations as there were workers on the force. Even in 1915, the most stable year of the decade, there were 122,211 accessions and 99,734 separations entailed in the maintenance and enlargement of a work force of 159,054 employees. This is equivalent to a complete overturn of nearly 75 per cent of the work force during the year. In 1917–18, the most unstable of the periods shown, 631,173 accessions and 613,467 separations, or a total of 1,244,640 labor changes, were involved in the maintenance and enlargement of a work force of 305,901 workers. This is equivalent to more than two complete overturns of the work force during the year.

On the basis of the unit full-year (3,000-hour) worker the situation in the decade reported may be described as follows: Throughout the 10-year period, for every equivalent 3,000-hour worker in the aggregate work force, there were on the average more than two labor changes per year. In 1915, the period of least instability, there were about one and a half labor changes for each full-year worker. In the war period, 1917-18, there were more than four labor changes for each full-year worker in the aggregate work force. This is as if during these 12 months all the employees had left their jobs, an entirely new set had come in to fill their places, and afterwards all the employees in this second set had left their jobs and had in turn been fully replaced by a third set of workers.

There is also to be observed in Table 2 a very definite tendency of the mobility rates to vary with the prevailing industrial situation. This is indicated by relatively high mobility rates for the years 1913 and 1917–18, years of great industrial activity, and by a recession in the rates in years in which the industrial situation has been less favorable. It is quite probable that the labor mobility for the year 1919 is actually higher than is indicated by the figures shown here, since the number of establishments upon which the rates are based is rather small and includes several establishments with unusually low labor-mobility records.

The replacement or "turnover" numbers and rates in Table 2 are indicated by boldfaced type. Thus in 1910 persons were being hired at a rate of 3.5 and employees were leaving at a rate of 3.4 per 10,000 labor hours. The aggregate standard work force was obviously undergoing expansion and all separating employees were more or less promptly replaced. The separation rate, therefore, is to be taken as the replacement or "turnover" rate. In 1914 the situation was very different. Most industrial plants were curtailing operations. The result was an accession rate of 2.7 and a separation rate of 2.9. In these circumstances it is obvious that not all the separating employees were replaced—even tardily—and that consequently the accession rate is to be taken as the replacement rate. In 1914, obviously, not all of the 326,755 separating employees contributed to the turnover, as that word is here defined. There were only 300,121 persons hired during that year. This number, therefore, measures

the turnover, because this is the number of abandoned jobs in which there were replacements. The excess of separations over accessions, amounting in 1914 to 26,634, involves a phase of labor mobility not included in turnover. This excess shows the extent to which the standard work force was diminished during 1914 and in relation to the labor hours is, as already explained, the labor decrease rate, the corresponding excess of accessions in such a year as 1918 being the labor increase rate. In general throughout the 10-year period the accessions and separations have naturally tended to balance each other pretty closely, although they show slight variations reflecting the changing industrial conditions from year to year. Over the whole decade it is to be noted that the accessions appreciably exceed the separations, indicating a net increase in the gainfully employed population and just about such a normal industrial expansion as would naturally be expected.

In Table 3 the mobility figures for the two periods, 1913–14 and 1917–18, are classified by industry groups and the same data are presented in graphic form in Chart A.

TABLE 3.—LABOR MOBILITY IN SPECIFIED INDUSTRY GROUPS, 1913-14 AND 1917-18.

[Replacement (or "turnover") numbers and rates are printed in boldfaced type.]

Industry group.	Number of establishments.	Number of workers.	Total labor hours.	Number of labor changes.		
				Accessions.	Separations.	Total (flux).
1913-14.						
Automobiles and parts	15	32,380	97,140,000	**50,564**	52,172	102,736
Chemical industries and refineries	3	2,900	8,700,000	3,447	**3,024**	6,471
Clothing and textile manufacturing	6	24,842	74,526,000	**15,715**	16,492	32,207
Leather and rubber goods	6	14,210	42,630,000	22,497	**19,123**	41,620
Machinery manufacturing	16	36,890	110,670,000	**29,465**	40,126	69,591
Mercantile establishments (wholesale and retail)	5	16,543	49,629,000	11,903	**10,964**	22,867
Miscellaneous metal products manufacturing	20	63,797	191,391,000	**52,313**	59,551	111,864
Printing and publishing	6	5,566	16,698,000	3,851	3,679	7,530
Public utilities:						
Gas and electricity manufacturing	1	650	1,950,000	**91**	202	293
Street railways	3	15,540	46,620,000	**4,094**	4,346	8,440
Telephone service	2	21,801	65,403,000	**8,465**	10,786	19,251
Slaughtering and meat packing	2	9,695	29,085,000	24,603	**23,242**	47,845
Total	84	244,814	734,442,000	**227,008**	243,707	470,715
1917-18.						
Automobiles and parts	30	96,856	290,568,000	222,954	**220,475**	443,429
Chemical industries and refineries	15	15,754	47,262,000	46,880	**39,622**	86,502
Clothing and textile manufacturing	8	10,794	32,382,000	**13,687**	15,227	28,914
Furniture and millwork	3	2,300	6,900,000	**5,727**	7,036	12,763
Leather and rubber goods	4	5,020	15,060,000	**12,119**	12,393	24,512
Machinery manufacturing	31	87,532	112,596,000	62,085	**59,782**	121,867
Mercantile establishments (wholesale and retail)	7	24,124	72,372,000	**33,165**	34,879	68,044
Miscellaneous metal products manufacturing	45	32,682	98,046,000	104,127	**99,006**	203,133
Printing and publishing	5	1,940	5,820,000	**3,433**	3,655	7,088
Public utilities:						
Gas and electricity manufacturing	10	18,908	56,724,000	**25,905**	26,661	52,566
Street railways	4	9,928	29,784,000	**8,062**	9,623	17,685
Telephone service	10	21,338	64,014,000	**19,740**	21,864	41,604
Slaughtering and meat packing	4	28,725	86,175,000	73,289	**63,244**	136,533
Total	176	305,901	917,703,000	631,173	**613,467**	1,244,640

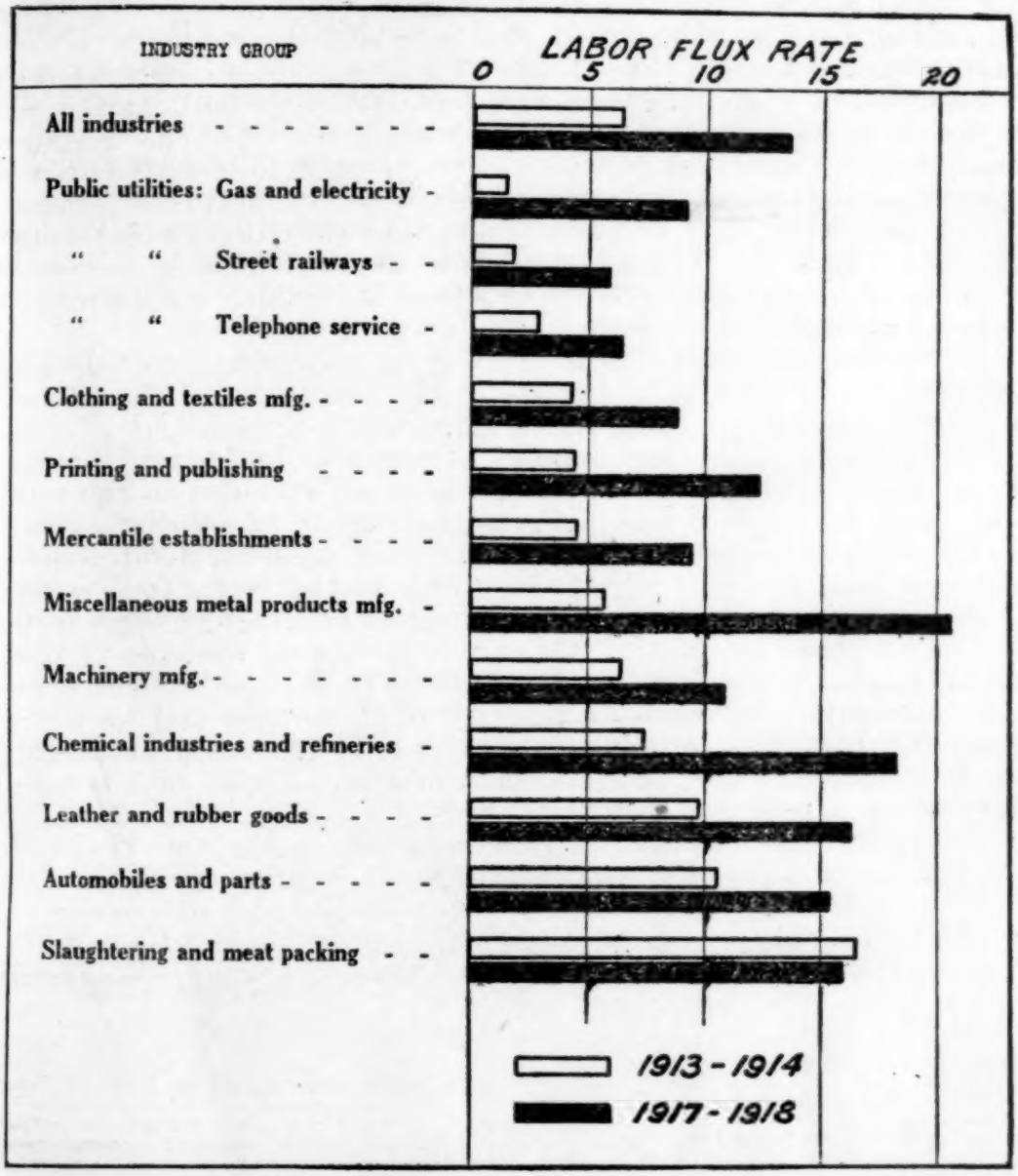
TABLE 3.—LABOR MOBILITY IN SPECIFIED INDUSTRY GROUPS, 1913-14 AND 1917-18—Concluded.

Industry group.	Rate per 10,000 labor hours.					
	Accessions.	Separations.	Flux.	Accessions.	Separations.	Flux.
	1913-14.			1917-18.		
Automobiles and parts	5.2	5.4	10.6	7.7	7.6	15.3
Chemical industries and refineries	4.0	3.5	7.5	9.9	8.4	18.3
Clothing and textile manufacturing	2.1	2.2	4.3	4.2	4.7	8.9
Furniture and millwork				8.3	10.2	18.5
Leather and rubber goods	5.3	4.5	9.8	8.0	8.2	16.2
Machinery manufacturing	2.7	3.6	6.3	5.5	5.3	10.8
Mercantile establishments (wholesale and retail)	2.4	2.2	4.6	4.6	4.8	9.4
Miscellaneous metal products manufacturing	2.7	3.1	5.8	10.6	10.1	20.7
Printing and publishing	2.3	2.2	4.5	5.9	6.3	12.2
Public utilities:						
Gas and electricity manufacturing	.5	1.0	1.5	4.6	4.7	9.3
Street railways	.9	.9	1.8	2.7	3.2	5.9
Telephone service	1.3	1.6	2.9	3.1	3.4	6.5
Slaughtering and meat packing	8.5	8.0	16.5	8.5	7.3	15.8
Total	3.1	3.3	6.4	6.9	6.7	13.6

Both Table 3 and Chart A show clearly the general increase of mobility rates over those of the prewar period and throw interesting side lights upon the influence of the war upon certain industries. Of the industry groups here represented, those which were most immediately affected by the necessity for articles of war are: Automobiles and parts, chemical industries, leather and rubber goods, machinery manufacturing, miscellaneous metal products, and slaughtering and meat packing. All of these groups, with one exception, show a decided increase in mobility rates over those of the prewar period. The rates of the slaughtering and meat-packing group show a slight decrease. This is not surprising in view of the fact that the mobility rate for this group in 1913–14 was already more than twice as great as the rate for all groups combined.

To undertake to show some definite relationship between the size of the establishment and labor mobility, detailed figures regarding the labor changes were so arranged as to show the mobility rates of establishments with less than 1,000 employees, of those having 1,000 and under 5,000, and of those with over 5,000 employees. In 1913–14 the flux rates for the different sizes of establishment in the order given above were 9.7, 5.9, and 6.2, respectively. The 1917–18 figures show flux rates of 17.3, 14.3, and 11.5, respectively. These figures in the main indicate a downward trend in mobility rates as the size of the establishment increases. It has not been possible to ascertain the exact reason for the relatively lower rates in the larger establishments, though it is conceivable that among the factors influencing the stability was the possibility of the larger establishments offering steadier work, relatively higher earnings, and better employment conditions generally. Lower rates might also indicate the efficiency of the employment department and the influence of the service and welfare activities which are generally carried on more extensively by the larger establishments.

CHART A.—LABOR FLUX RATES IN SPECIFIED INDUSTRY GROUPS IN 1913-14 AND 1917-18.



Incidence of Labor Mobility in Special Groups within the Work Force.

ATTENTION should be called to the fact that labor mobility rates shown for a given year or for an industry group as a whole may fail to reveal the existence of very considerable variations in the amount of shifting within the divisions named and that further classification was necessary to reveal the real significance of the situation. This applies even more to the mobility of individual establishments for the reason that the shifting may be largely confined to a single occupation or a group of occupations, to the semi-skilled and unskilled employees, to employees of either sex, or to certain departments or shifts.

A study of the labor mobility in a large car-building establishment shows how greatly the mobility rates of the different occupation

groups vary from the rates for the whole establishment. For example, the flux rate of the total working force of this establishment is 18.0, while at the same time the rate for one occupation is zero and for another is 39.2. The figures of this establishment also show that although for the establishment as a whole there has been an excess of separations over accessions, this condition applies only to some of the occupation groups, while others show a number of accessions greater than the number of separations. The result is corresponding changes in the mobility rates.

The records of 22 of the establishments covered in the investigation of 1915 and 10 of those reported in the inquiry of 1918 were in such shape that it was possible to compare the stability records of skilled and unskilled workers. The figures are shown in Table 4.

TABLE 4.—LABOR MOBILITY OF SKILLED AND UNSKILLED WORKERS, 1913-1915 AND 1917-18.

[10 establishments reporting for 1913, 5 for 1914, and 7 for 1915; 10 establishments reporting for year ending May 31, 1918.]

Class of workers.	Number of workers.	Total labor hours.	Labor changes.		
			Accessions.	Separations.	Total (flux).
			Number.		
1913–1915.					
Skilled	24,733	74,199,000	14,848	16,484	31,332
Unskilled	15,660	46,980,000	20,042	22,251	42,293
Total	40,393	121,179,000	34,890	38,735	73,625
1917–18.					
Skilled	16,169	48,507,000	21,919	24,830	46,749
Unskilled	4,408	13,224,000	19,661	19,203	38,864
Total	20,577	61,731,000	41,580	44,033	85,613
			Rate per 10,000 labor hours.		
1913–1915.					
Skilled			2.0	2.2	4.2
Unskilled			4.3	4.7	9.0
Total			2.9	3.2	6.1
1917–18.					
Skilled			4.5	5.1	9.6
Unskilled			14.9	14.5	29.4
Total			6.7	7.1	13.8

The labor mobility rates for the two classes of labor show that in both periods unskilled labor was much more unstable than skilled labor. Moreover, this excess of instability on the part of the unskilled was much greater in the war period than in the prewar period. In the earlier period the mobility rates of the unskilled were more than double the rates for the skilled. In 1917–18 the mobility rates of the unskilled were three times as great as those of the skilled. In the earlier period there was, among the skilled, slightly more than 1 labor change for each skilled member of the working forces of the 22 plants and nearly 3 changes in unskilled jobs for each unskilled worker.

In 1917–18 there were nearly 3 skilled-labor changes for each skilled worker and about 9 unskilled-labor changes for each unskilled worker.

On the basis of figures secured from a machine-tool manufacturing plant the responsibility of the day and night forces, respectively, for the varying mobility rates is established. Over the 4-year period, 1916–1919, the flux rate per 10,000 labor hours for the day force was 7.5, that of the night force 20.9, and that of the day and night forces combined 10.1. The mobility of the night force is nearly three times as great as that of the day force and the former is, therefore, responsible for an extent of mobility entirely out of proportion to its numerical strength in the organization. Over the 4-year period the night force constituted about 20 per cent of the total working force but is chargeable with 45 per cent of the total number of labor changes. The greater shifting among the night workers thus causes the flux rate for the establishment as a whole to be 35 per cent higher than it would be if the labor changes in the night force were as infrequent, relatively, as those in the day force.

A special study of the relative labor mobility among males and females in the working forces of 45 establishments for the period 1917–18 resulted in the following mobility rates: Males, accession rate 5.6, separation rate 6, flux rate 11.6; females, accession rate 4.1, separation rate 3.7, flux rate 7.8. Although the rates for females are actually lower than those for males this can not be said to offer conclusive evidence that the shifting is generally less extensive among women, since the comparison of the mobility between males and females is not made invariably between employees in the same occupation and doing similar work. This is especially noticeable in industry groups in which the female labor force constitutes only a small fraction of the total working force and is composed almost entirely of clerical employees.

Analysis of Accessions.

IN CONNECTION with the subject of the general extent of labor mobility brief reference should be made to some particular phases of the mobility situation having to do with the accession of employees. One of these is the proportion of rehirings among the total accessions and the other is the relation between the number of applicants and the number actually hired. The number of accessions as reported in this article does not indicate the number of different individuals hired, since the accessions represent the total number of hirings in a given period and include original hirings as well as subsequent rehirings. Figures on the extent of rehiring were obtained by examination of the service records of employees on the pay rolls of six establishments at the end of 1915. These figures show that the hiring of 44,166 individuals involved 61,225 hirings and rehirings (repeated transactions), with a resultant increase in the number of accession transactions of nearly 40 per cent. Of the 44,166 individual employees taken on, more than 76 per cent had been hired once only, 15 per cent had been hired twice, over 5 per cent had been hired 3 times, more than 2 per cent 4 times, and about 1½ per cent had been hired and rehired more than 5 times. Among the employees under observation here the highest number of hirings and rehirings was 11, involving, however, only 2 employees out of more than 44,000.

The figures concerning the number of applicants for jobs are based upon the records of 8 establishments which kept account of the number of applicants for a longer or shorter period between 1912 and 1919 and indicate that with an aggregate number of workers amounting to 122,973 there were 1,041,475 applicants, of which number 145,509, or 14 per cent, were actually hired; this means, in other words, that for each person hired for a job there were more than 7 persons applying for it.

Nature of Separations.

IN ATTEMPTING to get some idea of the relative responsibility of the various influences bearing upon the mobility of labor it is highly important to give special consideration to the three types of separations, namely, voluntary separations or quits, discharges, and lay-offs. In Table 5 are given the number, rate per 10,000 labor hours, and the percentage of employees—discharged, laid off, and leaving voluntarily. Figures are shown for each year from 1910 to 1915, inclusive, and for the 12-month period ending May 31, 1918.

TABLE 5.—TYPE OF SEPARATION (DISCHARGE, LAY-OFF, OR VOLUNTARY QUITTING) OF EMPLOYEES LEAVING, BY YEARS FROM 1910 TO 1915, INCLUSIVE, AND FOR THE 12-MONTH PERIOD ENDING MAY 31, 1918.

Year.	Number of establishments.	Number of workers.	Total labor hours.	Accessions.	Separations.			
					Discharges.	Lay-offs.	Voluntary separations.	Total.
1910	7	23,273	69,819,000	15,936	2,608	514	14,230	17,352
1911	13	56,577	169,731,000	53,506	9,837	5,082	35,716	50,635
1912	20	72,526	217,578,000	78,843	13,628	4,057	49,806	67,491
1913	35	134,823	404,469,000	182,276	32,094	13,334	141,035	186,463
1914	50	118,195	354,585,000	82,585	19,565	29,737	46,660	95,962
1915	28	78,984	236,952,000	50,421	6,946	8,536	26,862	42,344
1917–18	108	207,303	621,909,000	393,164	51,400	29,833	299,157	380,390
Total	261	691,681	2,075,043,000	856,731	136,078	91,093	613,466	840,637

Year.	Rate per 10,000 labor-hours.					Percentage of total separations due to—		
	Accessions.	Separations.						
		Discharges.	Lay-offs.	Voluntary separations.	Total.	Discharges.	Lay-offs.	Voluntary separations.
1910	2.28	0.37	0.07	2.04	2.48	15	3	82
1911	3.15	.58	.30	2.10	2.98	19	10	71
1912	3.62	.63	.19	2.29	3.11	20	6	74
1913	4.51	.79	.33	3.49	4.61	17	7	76
1914	2.33	.55	.84	1.32	2.71	20	31	49
1915	2.13	.29	.36	1.13	1.78	16	20	63
1917–18	6.32	.83	.48	4.81	6.12	14	8	79
Total	4.13	.66	.44	2.96	4.06	16	11	73

The arresting fact shown in the above rate and percentage distribution figures is that the great bulk of all separations to-day, as in 1910, is due to voluntary leaving. It also appears from these figures that periods of industrial prosperity are reflected in relatively low, and periods of depression in relatively high, proportions of lay-offs

to total separations, and that the lay-off rate is the most sensitive of the three separation rates to changing industrial conditions. Thus, in 1914, when the ratio of quits to total separations was lower than at any other time during the period covered by the figures, the proportion of lay-offs was higher than at any other time, constituting nearly one-third (31 per cent) of all separations, while in the immediately preceding year 1913 lay-offs made up only 7 per cent of all separations. The rate figures indicate that it is not alone the proportion, but also the actual rate of lay-off which is thus affected by business activity and depression, the lay-off rate for 1913 being 0.33, a relatively low figure, and for 1914, 0.84, an exceedingly high rate for lay-offs. The discharge rate is evidently subject to less extreme fluctuations than the lay-off rate, and it makes up from year to year a more constant proportion of the total separations. There appears, moreover, to be a rather definite relation between the accession and discharge rates, due, possibly, to the process of selection which goes on when new workers are taken on in large numbers. The consequence of the stimulating effect of business prosperity in boosting the voluntary leaving rates may be seen in the high rates of total separation in spite of the fact that the lay-off rates are relatively low. In periods of depression both the rates and the proportions of lay-off and discharge are larger than in periods of prosperity. This is due to the fact that when depression sets in there are unusually large numbers laid off, and employees are discharged more freely than would be the case when labor is urgently needed.

The degree of occupational training and skill possessed by the employee appears to make little or no difference in the proportion of quits, discharges, and lay-offs in the total separation rate. Returns from 22 establishments reporting mobility figures for skilled and unskilled employees separately indicate that 76 per cent of all skilled and 72 per cent of all unskilled employees who leave, quit voluntarily; 15 per cent of the skilled and 19 per cent of the unskilled were discharged, and that 10 per cent of the skilled and 9 per cent of the unskilled were laid off. The situation is quite different, however, with regard to the actual rate of separation, the figures indicating conclusively that the lay-off, discharge, and quitting rates, and of course the total separation rate, are each higher for unskilled than for skilled workers, the total separation rates being, as already stated, 2.2 for skilled and 4.7 for unskilled workers. The rate for each of the three types of separation shows about the same relation between skilled and unskilled, so that it would appear that skilled workers are about twice as stable as semiskilled and unskilled.

Seasonal Influences on Labor Mobility.

TABLE 6, showing the monthly trend in flux rates from January, 1910, to December, 1919, inclusive, brings out in greater detail the extent to which mobility figures immediately reflect the industrial conditions prevailing at the time.[7]

[7] Based upon following numbers of establishments reporting monthly figures: 1910, 3; 1911, 6; 1912, 8; 1913, 39; 1914, 26; 1915, 30; 1916, 10; 1917, 20; 1918, 19; 1919, 9.

TABLE 6.—LABOR FLUX RATES, BY MONTHS, FROM JANUARY, 1910, TO DECEMBER, 1919, INCLUSIVE.

Month.	Total labor change (flux) rate per 10,000 labor hours in—										
	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	Whole period, 1910–1919.
January	8.3	4.4	4.4	10.8	4.3	3.8	11.7	9.5	11.7	9.4	8.5
February	8.5	4.9	4.8	9.6	4.2	4.5	11.9	7.9	11.4	6.4	8.0
March	12.5	5.6	5.7	11.3	5.1	5.5	10.0	7.9	14.0	6.3	9.0
April	14.0	6.1	7.0	13.1	4.8	6.1	10.9	9.4	16.4	6.1	10.1
May	13.5	7.1	7.5	12.5	6.5	5.3	10.8	13.4	15.7	6.1	10.2
June	12.9	7.5	7.7	10.4	7.3	4.9	11.0	12.7	13.6	6.0	9.2
July	11.9	6.6	8.3	9.8	5.0	5.1	7.0	11.6	14.2	5.9	8.3
August	13.6	7.1	9.0	7.7	6.1	5.1	9.3	13.7	13.8	8.0	8.1
September	9.3	4.7	8.2	7.9	6.1	7.9	7.7	13.1	10.5	8.2	8.2
October	7.4	4.6	8.5	6.3	4.8	7.3	6.8	12.3	10.2	8.7	7.2
November	6.4	4.3	6.9	5.1	3.7	10.5	4.9	11.2	8.8	6.1	6.6
December	3.7	3.8	6.3	4.2	4.1	7.7	5.8	11.8	8.0	4.0	6.0
Year	10.1	5.6	7.0	9.1	5.1	6.1	8.8	11.4	12.7	6.7	8.3

To obtain a composite picture of the seasonality of labor mobility over a relatively long period of time and to show more particularly the psychological effects upon the shifting of labor of the distinctive physical conditions characterizing the seasons, Table 7 has been constructed. The mobility figures have been brought together in this table in such a way as to combine the figures for identical quarterly periods for each of the years from 1910 to 1919, inclusive; it is believed that by such a combination of the figures most of the influences upon mobility which are of a purely industrial character are neutralized and the influence of the seasons more accurately reflected.

TABLE 7.—EXTENT OF LABOR MOBILITY IN THE FOUR SEASONS OF THE YEAR.

[Based on the monthly data of the four seasons for all years from 1910–1919, combined. Replacement (or "turnover") numbers and rates are printed in boldfaced type.]

Month.	Number of workers.	Total labor hours.	Labor changes.		
			Accessions.	Separations.	Total (flux).
March, April, May	471,738	353,803,000	180,482	**165,445**	345,927
June, July, August	464,579	348,432,000	150,225	**146,828**	297,053
September, October, November	479,036	359,278,000	142,886	**119,245**	262,131
December, January, February	470,076	352,556,000	142,023	**120,781**	262,804
Total	471,357	1,414,069,000	615,616	**552,299**	1,167,915
			Rate per 10,000 labor hours.		
March, April, May			5.10	**4.68**	9.78
June, July, August			4.31	**4.21**	8.52
September, October, November			3.98	**3.32**	7.30
December, January, February			4.03	**3.43**	7.46
Total			4.35	**3.91**	8.26

The figures in Table 7 and the labor flux rates given in Table 6, for each month of the years 1910 to 1919 combined, show a tendency to maximum labor mobility in the spring and a gradual lessening of mobility during the summer and early fall.

The flux figures of Table 6 and, in addition, the corresponding accession and separation rates are plotted on Chart B. Since replacement rates, as explained above, correspond with accession rates when the accession rates are lower than the separation rates and with separation rates when the separation rates are lower than accession rates, it follows that the lowest points on the chart mark the rate and trend of labor replacement. That is to say, whichever line happens to be the lowest marks replacement.

Length of Service as a Factor in Labor Mobility.

IN THE preceding discussion of labor mobility one very important factor, that of length of service, has not been touched upon. Monthly and yearly figures expressed in the form of accession, separation, and flux rates are valuable for the purpose of showing the general extent of mobility in the labor force as a whole and its trend during any given period of time. Such figures, however, do not throw much light on the degree of stability within the working force in so far as it relates to the length of service of the active as well as the separated employees; without such figures no correct idea can be formed of the relative extent of labor mobility.

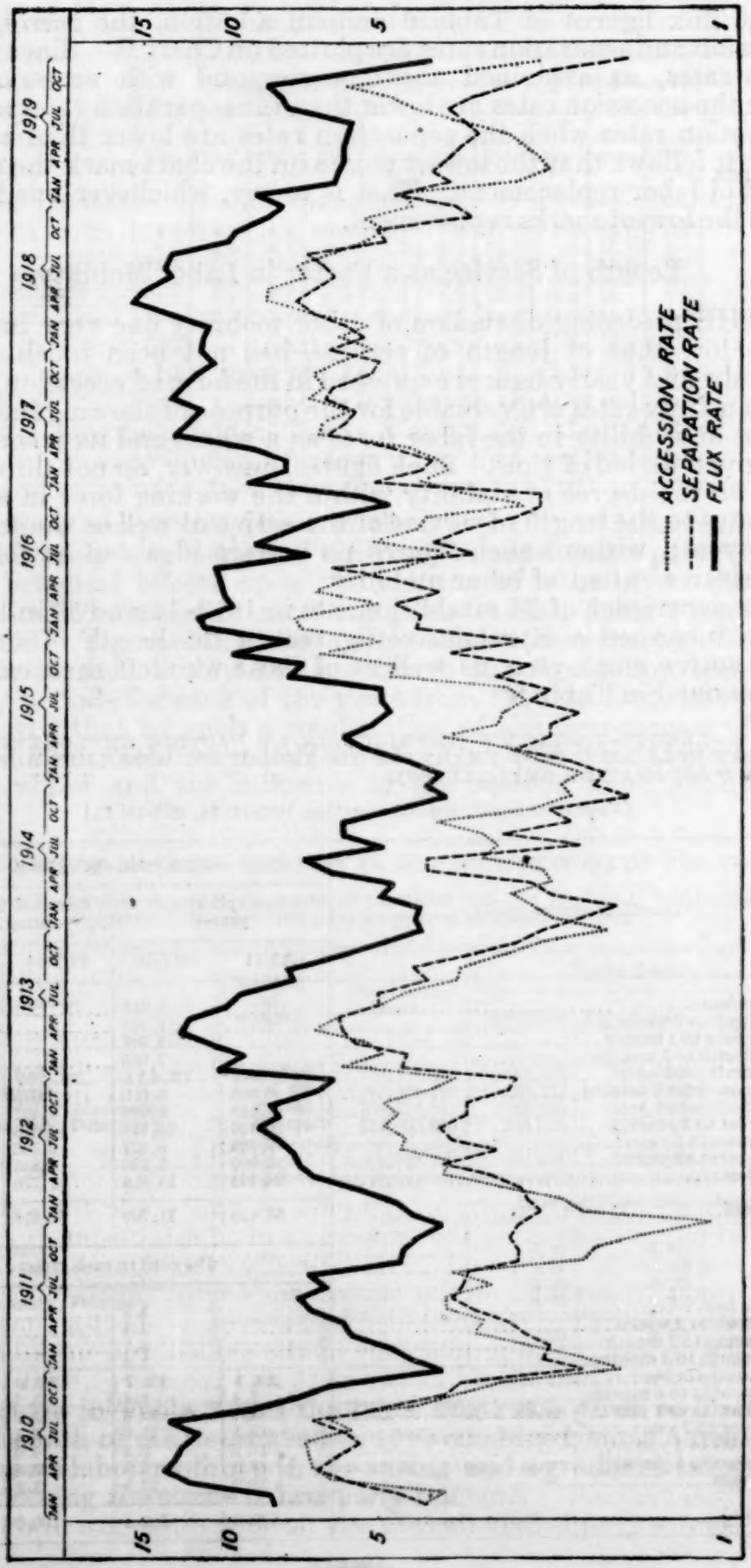
The experience of 34 establishments in 1913–14 and 53 in 1917–18, which furnished comprehensive figures on the length of service of their active employees, as well as of those who left their employ, is summarized in Table 8.

TABLE 8.—LENGTH-OF-SERVICE DISTRIBUTION OF "ACTIVE EMPLOYEES" (THOSE ON PAY ROLL AT END OF YEAR) AND OF EMPLOYEES WHO LEFT DURING THE YEAR ("SEPARATING EMPLOYEES").

[Number of establishments reporting, 1913-14: 34; 1917-18: 53.]

Length-of-service group.	Number in each group.			
	On pay roll at end of year—		Separated from service during year—	
	1913–14	1917–18	1913–14	1917–18
1 week or less	.....	1,615	.....	16,476
Over 1 week to 2 weeks	.....	1,793	.....	9,664
Over 2 weeks to 1 month	.....	2,948	.....	11,541
Over 1 month to 3 months	.....	7,055	.....	18,912
Three months or less	**13,365**	**13,411**	**28,407**	**56,593**
Over 3 months to 6 months	6,396	6,019	8,516	11,770
Over 6 months to 1 year	7,188	9,018	7,497	9,813
Over 1 year to 2 years	10,446	10,458	4,415	6,645
Over 2 years to 3 years	9,632	6,627	2,162	2,476
Over 3 years to 5 years	12,980	6,320	1,845	2,780
Over 5 years	28,443	19,916	1,776	3,015
Total	86,450	71,769	54,618	93,092
	Per cent in each group.			
1 week or less	.....	2.3	.....	17.7
Over 1 week to 2 weeks	.....	2.5	.....	10.4
Over 2 weeks to 1 month	.....	4.1	.....	12.4
Over 1 month to 3 months	.....	3.8	.....	20.3
Three months or less	**13.1**	**12.7**	**52.0**	**60.8**
Over 3 months to 6 months	7.4	8.4	15.6	12.6
Over 6 months to 1 year	8.3	12.6	13.7	10.5
Over 1 year to 2 years	12.1	14.6	8.1	7.1
Over 2 years to 3 years	11.1	9.2	4.0	2.7
Over 3 years to 5 years	15.0	8.8	3.4	3.0
Over 5 years	32.9	27.8	3.3	3.2
Total	100.0	100.0	100.0	100.0

CHART B.—FLUCTUATIONS IN LABOR MOBILITY, BY MONTHS, FROM JANUARY, 1910, TO DECEMBER, 1919, INCLUSIVE.



If we consider those employees having to their credit not more than one year of service as short-service employees, it will be noticed in this table that the proportion of such employees in the active work force is rather extensive. On the other hand, considerable proportions among the active employees had long-service records. The figures for those separated, however, present a striking contrast and undoubtedly reflect the influences of unusual industrial activity in both of the periods studied, but more especially the effect of war-time conditions upon labor mobility. In the period 1917–18, out of a total of 93,092 separated employees, over 40 per cent had on severing their connections served periods of one month or less, about 33 per cent had worked from one to six months, 10.5 per cent from six months to one year; a total of 84 per cent had to their credit continuous-service records of one year or less.

In both periods there was a considerable exodus of long-service employees; 18.8 per cent of all separating employees in 1913–14 and 16 per cent in 1917–18 were employees with service records of over one year. Nevertheless the census of the active employees taken at the end of the period shows large proportions of employees of long tenure. The figures for 1913–14 show 38.2 per cent with continuous-service records of from one to five years, and 32.9 per cent with service records of over five years; and the figures for 1917–18 show 32.6 per cent of all active employees with service records of from one to five years and 27.8 per cent with continuous-service records of over five years.

A count of the actual length of service of 439 separated employees in two establishments in the one-week-or-less group showed the number of employees having had specified days of service to be as follows: Less than one day of service, 21 employees; one day, 94 employees; 2 days, 57 employees; 3 days, 54 employees; 4 days, 48 employees; 5 days, 54 employees; 6 days, 111 employees. This shows that over 25 per cent worked one day or less, about 50 per cent worked from two to five days, and only a little over 25 per cent worked a full week.

A separate study of the relative proportions of active and separated employees in the different industry groups reveals considerable variation from the figures given above. Some of these groups show that as high a proportion as 30 per cent of all separated employees of the period 1917–18 had worked one week or less, while in other groups the proportion of the separated employees who had served three months or less was as high as from 60 to 80 per cent.

The relation between the degree of skill and the length of service of both active and separated employees was made the subject of a special inquiry reporting the experience of 17 establishments covering the years 1913, 1914, and 1915. Briefly, the figures indicate that only about one-tenth of the skilled employees on the pay roll, but nearly one-fourth of the unskilled had served as short a time as three months or less. The proportions of the skilled and unskilled active employees who had served from one to five years are about the same; in the over-five-years service group of active employees there is a considerable difference, however, the proportion of skilled in that group being 33.3 per cent, whereas the proportion of unskilled is only 16.6 per cent. Among the separated employees it is only in the long-service groups that there is any decided difference in the relative

proportions of skilled and unskilled employees. The unskilled separating employees show a slightly higher percentage in the length of service groups of one year or less, the figures being 81.7 per cent for skilled and 86.7 per cent for unskilled; in the over-one-to-five-year groups the proportion of skilled separated employees is 14.5 per cent, and that of the unskilled 11.6 per cent; in the over-five-year group the skilled represented 3.9 per cent and the unskilled 1.7 per cent of the total separations.

A study of the length-of-service figures of the active working force of 28 establishments for the period 1917–18, classified according to sex, shows the proportions of the sexes to be about equally divided in the lower length-of-service groups, the females having higher proportions in the service groups between six months and five years, while the males show a much greater proportion in the over-five-year group. A comparison of the length of service of the separated male and female employees for the year ending May 31, 1918, shows that larger proportions of separating male employees than of females are bunched in the short-service periods. Thus, 63 per cent of the total number of separating males as against 50 per cent of the females had served less than three months. In the six-months-to-one-year groups the proportions are about equally divided. In the long-time-service groups of separated employees the figures for males show that they are less prone to sever connections with an establishment after having worked in it a considerable period of time. Of all the separating females whose service records were reported, 18.7 per cent had served from one to five years, whereas only 11.3 per cent of all the separating males had served from one to five years. Finally, of the employees leaving after having served continuously more than five years, 3.6 per cent were males and 6 per cent were females.

Stable and Unstable Employees.

IN THE discussion of the figures on the length of service of the active working force attention has been called to the fact that in each establishment at a given time there will be found long-service employees who can not be said to have been a factor in the mobility in a period over which they have served continuously. This brings out the fact that there is more or less concentration in the mobility of the plant forces, and for that reason the rates of mobility as applied to the working force as a whole do not correctly assign the direct responsibility for the labor flux. It is evident that the rates of mobility will be the same if the whole working force changes completely once in the course of a year, or, if one-half of the working force changes two times, or, one-fourth of the working force changes four times in the course of a year, and so on. In the presentation of the figures that follow an attempt is made to show by means of length-of-service figures exactly what proportion of the work force is responsible for the labor mobility. The detailed figures on length of service given in Table 8 show that of the 71,769 persons on the pay rolls in 53 establishments on June 1, 1918, 43,321, or 60 per cent, had been in continuous service over one year. These long-service employees were in no way responsible for the labor mobility of these establishments for the 12-month period ending with that date. In

Table 9 the base upon which the rate of mobility is measured is that part of the working force which directly contributed to it.

TABLE 9.—COMPARISON OF LABOR MOBILITY RATES BASED ON THE TOTAL WORKING FORCE WITH THE RATES BASED ON THE UNSTABLE PART OF THE WORKING FORCE, YEAR ENDING MAY 31, 1918.

Number of establishments.	Total working force.[1]	Unstable part of working force.	Per cent that unstable part of working force is of total working force.	Labor hours worked by—		Labor changes.		
				Total working force.	Unstable part of working force.	Accessions.	Separations.	Total (flux).
53.....	69,553	26,232	38	208,659,000	78,696,000,	93,206	96,207	189,413

Number of establishments.	Rate per 10,000 labor hours, based on total working force.			Rate per 10,000 labor hours, based on unstable working force.		
	Accessions.[2]	Separations.[2]	Flux.[2]	Accessions.[3]	Separations.[3]	Flux.[3]
53.....	4.5	4.6	9.1	11.8	12.2	24.0

[1] This number is 2,216 less than the number on the pay roll of the 53 establishments at the end of May, 1918, as shown in Table 8, the labor time of the employees with less than one year's continuous service having been reduced to equivalent full year or 3,000-hour workers.
[2] Represents ratio of labor changes (accessions, separations, and flux) to labor hours of total working force.
[3] Represents ratio of labor changes (accessions, separations, and flux) to labor hours of unstable part of working force.

This table shows that in these 53 establishments with a working force of 69,553 there were at the end of the year 43,321 employees, or 62 per cent of the total number on the pay roll who had service record of over one year. Those employees were not responsible for any of the labor changes that took place during the year. The labor mobility in the 53 establishments was, therefore, concentrated upon 26,232 workers, or 38 per cent of the total working force. This relatively small part of the working force was responsible for all the labor changes which took place during the year, amounting to 93,206 accessions and 96,207 separations, a labor flux of 189,413 persons. This means that for every worker of the unstable working force more than 3 persons were hired and nearly 4 persons left employment, or that altogether there were more than 7 labor changes for each worker. A comparison of the labor mobility of the stable and unstable working force shows the labor mobility rates based on the labor hours of the unstable part of the work force to be nearly three times as great as the labor change rates based upon the labor hours of the whole working force.

Effect of Employment Policy on Labor Stability.

THE definite effectiveness of liberal labor policies and centralized systems of employment is demonstrated, in so far as it is possible to demonstrate such things in statistical terms, by the figures presented in Table 10. This table shows, by years, for the period from 1913 to 1919, inclusive, the mobility rates of 10 selected firms and of all other firms reporting. The 10 concerns were chosen not only because they had definite labor policies and centralized employment

machinery, but also on account of the fact that they had had considerable success in stablizing their work forces and keeping their labor flux rates at relatively low levels.

TABLE 10.—COMPARISON OF LABOR MOBILITY IN 10 SELECTED ESTABLISHMENTS WITH ITS MOBILITY IN ALL OTHER ESTABLISHMENTS REPORTING FOR THE CALENDAR YEARS 1913 TO 1919, INCLUSIVE.

[Replacement (or "turnover") rates are printed in boldfaced type.]

Year.	Labor change rates per 10,000 labor hours.					
	10 selected establishments.			All other establishments reporting.		
	Accession.	Separation.	Flux.	Accession.	Separation.	Flux.
1913	**5.4**	5.5	10.9	4.4	**4.3**	8.7
1914	**1.1**	1.5	2.6	**2.8**	3.1	5.9
1915	1.6	**.8**	2.4	3.0	**2.6**	5.6
1916	2.6	**1.4**	4.0	6.2	**4.5**	10.7
1917	**1.7**	1.9	3.6	5.8	**5.7**	11.5
1918	3.4	**2.7**	6.1	7.4	**6.2**	13.6
1919	3.2	**2.4**	5.6	3.6	**3.4**	7.0
Total	2.8	2.3	5.1	3.8	3.7	7.5

This table shows in very striking fashion that the 10 selected concerns have brought about a considerable reduction in the extent of their labor flux and have suffered a much slighter decrease in stability during the war period than did the general run of establishments.

This comparison of achievements shows the vital importance from the standpoint of the industrial establishment, of studying this subject of labor mobility, the necessity of observing the employment and personnel methods currently practiced by the more far-sighted employers, the desirability of keeping systematic and continuous employment records in order to measure the effects of different methods and policies upon labor stability, and the imperative need for the more widespread adoption by employers generally of such labor and employment policies as will be most effective in eliminating from our industrial life the evil and the waste of excessive labor mobility.

PRICES AND COST OF LIVING.

Retail Prices of Food in the United States.

THE following tables are based on figures which have been received by the Bureau of Labor Statistics from retail dealers through monthly reports of actual selling prices.[1]

Table 1 shows for the United States retail prices of food on March 15 and April 15, 1920, and on April 15, 1919, as well as the percentage changes in the month and in the year. For example, the price of a pound of potatoes in April, 1919, was 3.1 cents; in March, 1920, 6.8 cents; and in April, 1920, 9.1 cents. These figures show an increase of 34 per cent in the month and an increase of 194 per cent in the year. The cost of 22 articles combined[2] increased 5 per cent in the month and 16 per cent in the year.

TABLE 1.—AVERAGE RETAIL PRICES OF SPECIFIED FOOD ARTICLES AND PER CENT OF INCREASE OR DECREASE, APR. 15, 1920, COMPARED WITH APR. 15, 1919, AND MARCH 15, 1920.

[Percentage changes of five-tenths of 1 per cent and over are given in whole numbers.]

Article.	Unit.	Average retail price on—			Per cent of increase (+) or decrease (−) Apr. 15, 1920, compared with—	
		Apr. 15, 1919.	Mar. 15, 1920.	Apr. 15, 1920.	Apr. 15, 1919.	Mar. 15, 1920.
		Cents.	*Cents.*	*Cents.*		
Sirloin steak	Pound	43.7	40.8	43.2	− 1	+ 6
Round steak	do	40.5	37.5	39.9	− 1	+ 6
Rib roast	do	34.6	31.9	33.5	− 3	+ 5
Chuck roast	do	29.4	25.1	26.6	− 10	+ 6
Plate beef	do	22.6	18.2	19.0	− 16	+ 4
Pork chops	do	41.4	39.1	43.2	+ 4	+10
Bacon	do	57.2	50.2	51.7	− 10	+ 3
Ham	do	52.9	51.2	53.6	+ 1	+ 5
Lamb, leg of	do	39.9	39.8	43.0	+ 8	+ 8
Hens	do	43.0	45.7	47.8	+ 11	+ 5
Salmon, canned	do	32.2	37.6	37.8	+ 17	+ 1
Milk, fresh	Quart	15.0	16.6	16.3	+ 9	− 2
Milk, evaporated (unsweetened)	15–16 oz. can	15.0	15.1	14.4	− 4	− 5
Butter	Pound	71.3	75.2	76.1	+ 7	+ 1
Oleomargarine	do	39.2	43.1	43.2	+ 10	+ 0.2
Nut margarine	do	35.2	36.1	36.1	+ 3	0
Cheese	do	41.9	42.8	42.8	+ 2	0
Lard	do	35.3	30.4	30.1	− 15	− 1
Crisco	do	33.4	37.5	37.5	+ 12	0
Eggs, strictly fresh	Dozen	49.3	55.6	52.8	+ 7	− 5
Bread	Pound	9.8	11.2	11.2	+ 14	0

[1] In addition to retail prices of food, the Bureau secures prices of coal, gas, and dry goods from each of 51 cities, and publishes these prices as follows: Coal, in the March and September issues of the MONTHLY LABOR REVIEW; gas, in the June issue; dry goods, in the April, July, October, and December issues.

[2] The following are the 22 articles, weighted according to the consumption of the average family: Sirloin steak, round steak, rib roast, chuck roast, plate beef, pork chops, bacon, ham, lard, hens, flour, corn meal, eggs, butter, milk, bread, potatoes, sugar, cheese, rice, coffee, tea. These include all articles for which prices have been secured each month since 1913 with the exception of lamb, for which the Bureau has no consumption figures.

TABLE 1.—AVERAGE RETAIL PRICES OF SPECIFIED FOOD ARTICLES AND PER CENT OF INCREASE OR DECREASE, APR. 15, 1920, COMPARED WITH APR. 15, 1919, AND MARCH 15, 1920—Concluded.

Article.	Unit.	Average retail price on—			Per cent of increase (+) or decrease (−) Apr. 15, 1920, compared with—	
		Apr. 15, 1919.	Mar. 15, 1920.	Apr. 15, 1920.	Apr. 15, 1919.	Mar. 15, 1920.
		Cents.	*Cents.*	*Cents.*		
Flour	Pound	7.2	8.0	8.1	+ 13	+ 1
Corn meal	do	6.0	6.5	6.5	+ 8	0
Rolled oats	do	8.4	10.3	10.4	+ 24	+ 1
Corn flakes	8-oz. pkg.	14.0	14.1	14.1	+ 1	0
Cream of Wheat	28-oz. pkg.	25.0	29.7	29.9	+ 20	+ 1
Macaroni	Pound	19.3	20.2	20.3	+ 5	+ 0.4
Rice	do	13.4	18.4	18.6	+ 39	+ 1
Beans, navy	do	12.1	11.9	11.8	− 2	− 1
Potatoes	do	3.1	6.8	9.1	+194	+34
Onions	do	6.9	9.4	10.1	+ 46	+ 7
Cabbage	do	9.1	8.7	9.2	+ 1	+ 6
Beans, baked	No. 2 can	17.7	16.8	16.8	− 5	0
Corn, canned	do	19.2	18.5	18.5	− 4	0
Peas, canned	do	19.0	19.0	19.0	0	0
Tomatoes, canned	do	15.9	15.1	15.1	− 5	0
Sugar, granulated	Pound	10.6	18.7	20.2	+ 91	+ 8
Tea	do	69.7	73.2	73.3	+ 5	+ 0.1
Coffee	do	38.5	49.1	49.1	+ 28	0
Prunes	do	21.9	28.7	28.4	+ 30	− 1
Raisins	do	16.3	26.4	26.9	+ 65	+ 2
Bananas	Dozen	37.6	41.4	41.7	+ 11	+ 1
Oranges	do	55.5	62.0	64.6	+ 16	+ 4
22 weighted articles [1]					+16	+ 5

[1] See note 2, p. 57.

Table 2 shows for the United States average retail prices of specified food articles on April 15 of each year, 1913 to 1920, together with the percentage change in April of each year compared with April, 1913. For example, as compared with the price in April, 1913, potatoes showed an increase of 20 per cent in 1914. In April, 1915, the price was the same as in April, 1913. As compared with April, 1913, the price in April, 1916, showed an increase of 53 per cent; in April, 1917, an increase of 287 per cent; in April, 1918, an increase of 47 per cent; in April, 1919, an increase of 107 per cent; and in April, 1920, an increase of 507 per cent. This means that the retail price of potatoes in April, 1920, was a little over 6 times as much as it was in April, 1913.

The cost of 22 articles, combined, increased 115 per cent during the seven-year period.

TABLE 2.—AVERAGE RETAIL PRICES OF SPECIFIED FOOD ARTICLES AND PER CENT OF INCREASE OR DECREASE APR. 15 OF EACH YEAR, 1914 TO 1920, COMPARED WITH APR. 15, 1913.

[Percentage changes of five-tenths of 1 per cent and over are given in whole numbers.]

Article.	Unit.	Average retail price, Apr. 15—								Per cent of increase (+) or decrease (−) Apr. 15 of each specified year compared with Apr. 15, 1913.						
		1913	1914	1915	1916	1917	1918	1919	1920	1914	1915	1916	1917	1918	1919	1920
		Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.							
Sirloin steak	Lb.	25.5	25.4	25.1	27.0	31.7	36.6	43.7	43.2	−0.4	− 2	+ 6	+ 24	+ 44	+ 71	+ 69
Round steak	Lb.	22.2	23.0	22.3	24.0	29.0	34.5	40.5	39.9	+ 4	+0.4	+ 8	+ 31	+ 55	+ 82	+ 80
Rib roast	Lb.	20.0	20.1	19.7	21.1	25.2	29.3	34.6	33.5	+ 1	− 2	+ 6	+ 26	+ 47	+ 73	+ 68
Chuck roast	Lb.	16.2	16.4	15.8	16.9	20.9	25.5	29.4	26.6	+ 1	− 2	+ 4	+ 29	+ 57	+ 81	+ 64
Plate beef	Lb.	12.2	12.4	12.1	12.7	16.0	19.9	22.6	19.0	+ 2	− 1	+ 4	+ 31	+ 63	+ 85	+ 56
Pork chops	Lb.	21.6	21.7	19.7	22.5	30.6	35.6	41.4	43.2	+0.4	− 9	+ 4	+ 42	+ 65	+ 92	+100
Bacon	Lb.	26.8	26.8	26.4	28.1	38.2	49.5	57.2	51.7	0	− 1	+ 5	+ 43	+ 85	+113	+ 93
Ham	Lb.	26.5	26.6	25.4	28.7	36.5	44.6	52.9	53.6	+0.4	− 4	+ 8	+ 38	+ 68	+100	+102
Lamb, leg of	Lb.	20.2	19.3	21.0	23.0	27.6	35.3	39.9	43.0	− 4	+ 4	+ 14	+ 37	+ 75	+ 98	+113
Hens	Lb.	22.2	23.0	21.3	23.7	29.1	[1]	43.0	47.8	+ 4	− 4	+ 7	+ 31	[1]	+ 94	+115
Salmon (canned)	Lb.	.....	.....	19.8	20.0	23.6	29.5	32.2	37.8	.....	.....	.....	.....	.....	.....	.....
Milk, fresh	Qt.	8.9	8.9	8.8	8.8	10.1	13.2	15.0	16.3	0	− 1	− 1	+ 13	+ 48	+ 69	+ 83
Milk, evaporated (unsweetened)	[2]	.....	.....	.....	.....	.....	.....	15.0	14.4	.....	.....	.....	.....	.....	.....	.....
Butter	Lb.	40.4	32.9	35.9	41.3	51.0	50.7	71.3	76.1	− 19	− 11	+ 2	+ 26	+ 25	+ 76	+ 88
Oleomargarine	Lb.	.....	.....	.....	.....	.....	.....	39.2	43.2	.....	.....	.....	.....	.....	.....	.....
Nut margarine	Lb.	.....	.....	.....	.....	.....	.....	35.2	36.1	.....	.....	.....	.....	.....	.....	.....
Cheese	Lb.	22.0	23.0	23.3	24.9	33.1	34.1	41.9	42.8	+ 5	+ 6	+ 13	+ 50	+ 55	+ 90	+ 95
Lard	Lb.	15.8	15.6	15.1	15.7	26.4	33.1	35.3	30.1	− 1	− 4	− 1	+ 67	+109	+123	+ 91
Crisco	Lb.	.....	.....	.....	.....	.....	.....	33.4	37.5	.....	.....	.....	.....	.....	.....	.....
Eggs, strictly fresh	Doz.	25.2	25.5	26.0	27.3	38.7	42.5	49.3	52.8	+ 1	+ 3	+ 8	+ 54	+ 69	+ 96	+110
Bread	Lb.	5.6	6.2	7.1	7.0	8.4	9.8	9.8	11.2	+ 11	+ 27	+ 25	+ 50	+ 75	+ 75	+100
Flour	Lb.	3.3	3.3	4.5	3.9	6.8	6.6	7.2	8.1	0	+ 36	+ 18	+106	+100	+118	+145
Corn meal	Lb.	2.9	3.1	3.3	3.2	4.6	7.1	6.0	6.5	+ 7	+ 14	+ 10	+ 59	+145	+107	+124
Rolled oats	Lb.	.....	.....	.....	.....	.....	.....	8.4	10.4	.....	.....	.....	.....	.....	.....	.....
Cornflakes	[3]	.....	.....	.....	.....	.....	.....	14.0	14.1	.....	.....	.....	.....	.....	.....	.....
Cream of Wheat	[4]	.....	.....	.....	.....	.....	.....	25.0	29.9	.....	.....	.....	.....	.....	.....	.....
Macaroni	Lb.	.....	.....	.....	.....	.....	.....	19.3	20.3	.....	.....	.....	.....	.....	.....	.....
Rice	Lb.	8.6	8.7	9.1	9.1	9.4	12.1	13.4	18.6	+ 1	+ 6	+ 6	+ 9	+ 41	+ 56	+116
Beans, navy	Lb.	.....	.....	7.7	9.4	16.7	18.0	12.1	11.8	.....	.....	.....	.....	.....	.....	.....
Potatoes	Lb.	1.5	1.8	1.5	2.3	5.8	2.2	3.1	9.1	+ 20	0	+ 53	+287	+ 47	+107	+507
Onions	Lb.	.....	.....	3.6	4.8	13.4	3.3	6.9	10.1	.....	.....	.....	.....	.....	.....	.....
Cabbage	Lb.	.....	.....	.....	.....	.....	.....	9.1	9.2	.....	.....	.....	.....	.....	.....	.....
Beans, baked	[5]	.....	.....	.....	.....	.....	.....	17.7	16.8	.....	.....	.....	.....	.....	.....	.....
Corn, canned	[5]	.....	.....	.....	.....	.....	.....	19.2	18.5	.....	.....	.....	.....	.....	.....	.....
Peas, canned	[5]	.....	.....	.....	.....	.....	.....	19.0	19.0	.....	.....	.....	.....	.....	.....	.....
Tomatoes, canned	[5]	.....	.....	.....	.....	.....	.....	15.9	15.1	.....	.....	.....	.....	.....	.....	.....
Sugar, granulated	Lb.	5.4	5.0	6.7	8.0	9.6	9.1	10.6	20.2	− 7	+ 24	+ 48	+ 78	+ 69	+ 96	+274
Tea	Lb.	54.3	54.5	54.4	54.6	54.9	63.9	69.7	73.3	+0.4	+0.2	+ 1	+ 1	+ 18	+ 28	+ 35
Coffee	Lb.	29.8	29.7	30.0	29.9	30.0	30.1	38.5	49.1	−0.3	+ 1	+0.3	+ 1	+ 1	+ 29	+ 65
Prunes	Lb.	.....	.....	13.7	13.3	14.5	16.6	21.9	28.4	.....	.....	.....	.....	.....	.....	.....
Raisins	Lb.	.....	.....	12.5	12.6	14.2	15.1	16.3	26.9	.....	.....	.....	.....	.....	.....	.....
Bananas	Doz.	.....	.....	.....	.....	.....	.....	37.6	41.7	.....	.....	.....	.....	.....	.....	.....
Oranges	Doz.	.....	.....	.....	.....	.....	.....	55.5	64.6	.....	.....	.....	.....	.....	.....	.....
22 weighted articles.[6]	.....	.....	.....	.....	.....	.....	.....	.....	.....	− 1	+ 1	+ 9	+ 47	+ 57	+ 85	+115

[1] No hens sold in April, 1918, by order of Food Administration.
[2] 15-16-ounce can.
[3] 8-ounce package.
[4] 28-ounce package.
[5] No. 2 can.
[6] See note 2, p. 57.

Relative Retail Prices of 22 Articles of Food.

IN TABLE 3 the average monthly and yearly prices of 22 food articles [3] are shown as relative prices or percentages of the average prices for the year 1913. These relatives are computed by dividing the average price of each commodity for each month and each year by the average price of that commodity for 1913. Relative prices must be used with caution. For example, the relative price of pork chops in November, 1919, was 200, which means that the money price was 200 per cent of the money price in 1913, or, in other words, the price doubled. The relative price of pork chops in December was 181, showing a drop of 19 points from 200, which is a decrease of only 9.5 per cent.

In the last column of this table are given index numbers [4] showing the changes by months and years in the retail cost of the 22 food articles weighted according to the importance of each article in the consumption of the average family. Prices are obtained each month for 43 food articles, but only 22 of these are included in the retail food price index because the amounts consumed by the average family have been obtained as yet for only these 22 food articles. These articles comprise about two-thirds of the entire food budget of the average family and reflect with great accuracy changes in the cost of the food budget. The figure representing the cost of these 22 food articles was 200 in March and 211 in April. This shows that, as compared with 1913, the cost of these food articles was in April, 1920, more than double what it was in 1913, and that during the month from March to April there was an increase of 5 per cent in the cost of these articles.

The curve shown in the chart on page 64 pictures more readily to the eye the changes in the cost of the family market basket and the trend in the cost of the food budget than do the index numbers given in the table. The chart has been drawn on the logarithmic scale [5] because the percentages of increase or decrease are more accurately shown than on the arithmetic scale.

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[3] For list of articles, see note 2, p. 57.

[4] For a discussion of the method used in the computation of these index figures, see MONTHLY LABOR REVIEW for March, 1920, p. 34.

[5] For a discussion of the logarithmic chart, see article on "Comparison of arithmetic and ratio charts" by Lucian W. Chaney, MONTHLY LABOR REVIEW for March, 1919, pp. 20-34. Also, "The 'ratio' chart," by Prof. Irving Fisher, reprinted from Quarterly Publications of the American Statistical Association, June, 1917, 24 pp.

TABLE 3.—RELATIVE RETAIL PRICES OF THE PRINCIPAL ARTICLES OF FOOD IN THE UNITED STATES, 1907 TO APRIL, 1920.

Year and month.	Sirloin steak.	Round steak.	Rib roast.	Chuck roast.	Plate beef.	Pork chops.	Bacon.	Ham.	Lard.	Hens.	Eggs.	Butter.	Cheese.	Milk.	Bread.	Flour.	Corn meal.	Rice.	Potatoes.	Sugar.	Coffee	Tea.	22 weighted articles.
1907	71	68	76	.....	.....	74	74	76	81	81	84	85	.....	87	.....	95	88	.....	105	105	.....	.....	82
1908	73	71	78	.....	.....	76	77	78	80	83	86	86	.....	90	.....	102	92	.....	111	108	.....	.....	84
1909	77	74	81	.....	.....	83	83	82	90	89	93	90	.....	91	.....	109	94	.....	112	107	.....	.....	89
1910	80	78	85	.....	.....	92	95	91	104	94	98	94	.....	95	.....	108	95	.....	101	109	.....	.....	93
1911	81	79	85	.....	.....	85	91	89	88	91	93	88	.....	96	.....	102	94	.....	130	111	.....	.....	92
1912	91	89	94	.....	.....	91	91	91	94	93	99	98	.....	97	.....	115	102	.....	132	115	.....	.....	98
1913: Av. for year	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**
January	94	92	95	93	92	89	94	93	97	95	108	107	100	100	100	100	99	99	91	106	100	100	98
February	94	93	95	93	93	90	95	94	98	97	91	108	100	100	100	100	98	99	90	100	100	100	97
March	97	96	98	98	98	97	97	97	99	100	77	108	100	100	100	100	98	99	88	99	100	100	97
April	101	99	101	101	101	103	99	99	100	104	73	106	100	100	100	100	98	99	87	98	100	100	98
May	101	100	101	101	101	100	100	99	100	104	76	94	99	99	100	101	98	99	91	97	100	100	97
June	102	101	102	102	101	99	101	102	100	103	81	92	99	99	100	101	98	99	104	97	100	100	98
July	104	104	102	103	101	103	104	104	101	102	87	91	99	99	100	101	98	100	110	100	100	100	100
August	104	104	102	103	101	104	105	106	102	101	96	92	100	99	100	100	100	100	109	102	100	100	101
September	103	104	101	103	102	108	104	104	102	101	109	98	100	100	100	100	102	100	110	104	100	100	102
October	101	104	101	103	102	107	103	102	101	100	121	100	101	100	100	99	103	100	106	101	100	100	104
November	100	102	100	102	102	102	101	100	101	97	144	101	102	102	100	99	104	100	107	99	100	100	105
December	99	101	100	101	102	97	99	99	100	98	138	104	102	102	100	99	104	100	106	98	100	100	104
1914: Av. for year	**102**	**106**	**103**	**104**	**104**	**105**	**102**	**102**	**99**	**102**	**102**	**94**	**104**	**100**	**112**	**104**	**105**	**101**	**108**	**108**	**100**	**100**	**102**
January	99	102	100	102	102	99	98	98	100	100	126	104	104	102	110	98	104	100	108	95	99	100	104
February	99	102	101	103	102	100	98	99	99	104	106	93	104	102	110	99	103	100	108	94	99	100	101
March	100	103	101	102	102	100	99	99	99	105	90	92	105	101	110	99	103	100	107	93	100	100	99
April	100	103	102	103	102	103	99	99	99	108	74	86	104	100	110	99	103	100	105	91	100	100	97
May	102	105	102	103	103	106	99	99	98	106	77	85	103	100	110	99	103	100	112	91	100	101	98
June	103	106	103	104	103	103	100	100	97	103	82	88	103	100	110	99	103	100	132	93	100	101	99
July	106	109	105	106	104	106	101	103	97	103	87	89	103	100	110	98	103	101	155	95	99	101	102
August	110	113	108	109	107	119	107	108	99	104	96	94	103	100	112	106	105	101	111	143	100	101	107
September	107	110	105	108	107	113	108	108	99	103	107	98	104	100	114	113	109	101	105	145	100	101	107
October	103	107	104	106	106	110	106	105	98	100	113	98	104	101	114	111	109	101	89	132	99	101	105
November	100	105	103	104	105	104	104	102	99	97	131	103	104	101	114	112	109	101	83	113	99	101	105
December	101	103	101	103	103	93	103	100	97	94	139	103	104	101	116	113	107	101	84	110	99	101	105
1915: Av. for year	**101**	**103**	**101**	**101**	**100**	**96**	**100**	**97**	**93**	**97**	**99**	**93**	**105**	**99**	**124**	**126**	**108**	**104**	**89**	**120**	**101**	**100**	**101**
January	100	102	101	101	102	88	101	98	97	95	129	101	105	101	120	124	109	104	85	110	101	100	103
February	98	100	100	99	101	85	99	96	97	97	98	98	106	100	126	138	110	104	84	118	101	100	101
March	97	99	99	98	100	85	98	95	96	99	74	94	106	99	126	136	110	104	82	120	101	100	98
April	99	100	100	99	100	94	98	94	96	100	75	94	105	99	126	137	109	104	86	122	101	100	99
May	101	103	101	101	101	93	98	95	96	101	76	91	106	98	128	139	109	104	89	124	101	100	100
June	103	105	103	103	101	98	99	97	95	98	78	90	106	98	128	130	109	104	99	126	101	100	100
July	105	107	104	103	101	100	100	98	93	97	81	90	105	98	126	125	108	104	85	127	101	100	100
August	104	107	204	103	101	103	100	98	89	97	88	88	103	99	126	124	108	104	82	123	101	100	100
September	104	106	103	102	101	107	100	97	88	97	101	88	103	99	124	117	108	104	79	118	100	100	101

TABLE 3.—RELATIVE RETAIL PRICES OF THE PRINCIPAL ARTICLES OF FOOD IN THE UNITED STATES, 1907 TO APRIL, 1920—Concluded.

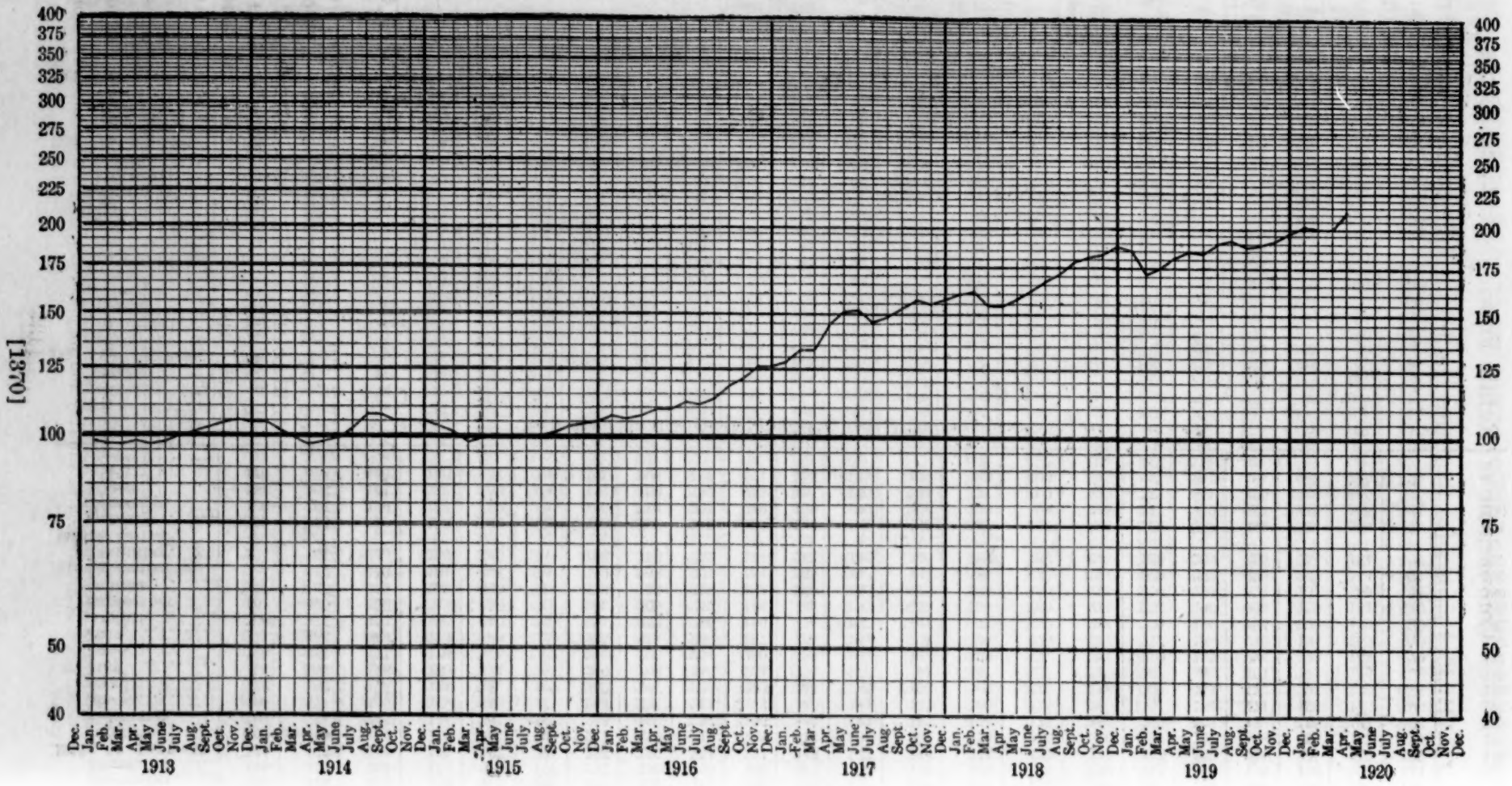
Year and month.	Sirloin steak.	Round steak.	Rib roast.	Chuck roast.	Plate beef.	Pork chops.	Bacon.	Ham.	Lard.	Hens.	Eggs.	Butter.	Cheese.	Milk.	Bread.	Flour.	Corn meal.	Rice.	Potatoes.	Sugar	Coffee	Tea.	22 weighted articles.
1915, etc.—Concld.																							
October	103	104	102	101	99	110	101	99	91	97	117	92	104	100	124	113	108	104	94	111	100	100	103
November	101	102	101	99	98	99	101	100	92	95	133	95	105	100	122	113	107	104	97	119	100	100	104
December	99	101	100	99	98	87	101	100	92	95	135	101	107	100	122	114	107	104	106	124	100	100	105
1916: Av. for year	**105**	**110**	**107**	**107**	**106**	**103**	**106**	**109**	**111**	**111**	**109**	**103**	**117**	**102**	**130**	**135**	**113**	**105**	**155**	**146**	**100**	**100**	**114**
January	101	102	101	99	99	89	101	101	93	101	123	100	110	100	122	120	107	105	136	123	100	100	107
February	101	102	102	99	100	92	101	102	94	104	101	99	112	100	124	125	108	104	141	125	100	100	106
March	104	104	104	103	102	104	103	104	96	107	82	105	113	100	124	120	107	104	140	137	100	100	107
April	106	108	106	106	105	107	104	107	100	111	79	108	113	99	124	119	108	104	138	145	100	100	109
May	109	112	110	109	107	109	105	109	106	113	82	97	112	99	124	119	108	104	140	156	100	100	109
June	113	117	113	113	111	110	107	110	108	114	87	95	111	99	124	117	108	105	167	158	100	100	112
July	113	116	112	112	109	111	107	111	110	113	93	93	110	100	124	116	108	105	134	160	100	100	111
August	112	115	111	110	107	116	108	111	111	112	105	95	111	101	126	134	110	105	141	155	100	100	113
September	111	115	110	110	107	125	110	114	118	113	120	102	116	102	136	148	113	105	161	141	100	100	118
October	108	111	108	108	106	118	110	114	123	114	132	109	122	105	144	155	117	105	165	149	100	100	121
November	106	108	106	107	106	111	111	114	135	112	149	114	132	109	150	174	126	105	198	157	100	100	126
December	106	107	106	106	106	106	110	114	137	112	154	118	140	112	138	167	131	105	198	151	100	100	126
1917: Av. for year	**124**	**130**	**126**	**131**	**130**	**152**	**152**	**142**	**175**	**134**	**139**	**127**	**150**	**125**	**164**	**211**	**192**	**119**	**253**	**169**	**101**	**107**	**146**
January	109	111	109	109	108	113	110	114	136	119	158	118	141	112	140	171	132	105	225	146	100	100	128
February	113	117	114	116	116	125	114	118	138	126	147	122	142	112	142	171	136	104	290	148	100	100	133
March	116	119	118	128	121	133	123	125	151	129	101	121	146	112	144	174	137	104	297	160	101	101	133
April	125	130	127	131	132	146	141	136	167	136	112	133	150	114	150	206	154	108	339	175	101	101	145
May	127	133	130	134	135	146	155	144	176	138	116	122	153	117	168	266	178	121	352	183	101	103	151
June	129	135	132	137	137	148	158	145	177	136	119	123	153	119	170	246	182	125	366	170	101	104	152
July	129	137	130	137	136	151	159	147	174	131	122	120	149	125	176	220	195	123	246	166	103	110	146
August	130	138	129	136	134	164	160	147	176	131	134	124	148	128	182	229	219	122	206	181	102	111	149
September	131	133	131	137	135	185	164	152	188	142	152	129	152	132	176	223	272	124	172	179	102	112	153
October	130	138	130	136	136	185	178	159	198	146	160	133	158	143	176	214	232	128	178	177	102	113	157
November	124	133	127	132	134	165	179	159	207	138	168	138	156	144	176	208	235	131	183	174	102	114	155
December	126	134	128	134	134	161	181	161	211	143	184	142	156	147	166	205	235	133	178	172	102	114	157
1918: Av. for year	**153**	**165**	**155**	**166**	**170**	**186**	**196**	**178**	**211**	**177**	**165**	**151**	**162**	**156**	**175**	**203**	**227**	**148**	**188**	**176**	**102**	**119**	**168**
January	129	137	130	138	142	163	180	162	208	154	195	148	156	151	168	200	233	134	188	173	102	115	160
February	131	141	133	142	146	160	179	163	209	170	182	151	158	151	170	200	233	136	188	193	102	112	161
March	133	143	135	145	150	161	181	164	210	(1)	128	144	159	151	171	200	240	138	147	167	102	113	154
April	144	155	148	159	164	170	183	166	209	(1)	123	132	154	148	175	200	237	139	129	165	101	117	154
May	157	170	161	174	181	175	187	170	208	178	123	133	151	148	177	200	233	141	129	165	101	117	158
June	168	182	169	184	188	177	191	173	206	177	123	133	150	146	179	203	223	144	171	165	101	119	162
July	166	181	168	182	185	180	194	181	206	178	142	137	152	148	179	203	223	148	229	167	101	120	167
August	163	178	165	177	179	201	200	180	209	181	155	141	157	153	177	206	227	154	229	169	101	121	171
September	164	178	165	178	181	220	208	193	213	185	170	155	163	161	177	206	230	157	229	175	102	122	178

October	161	175	163	174	178	216	214	193	216	183	186	170	174	166	175	203	227	161	206	193	102	124		181
November	159	173	162	172	175	206	216	195	216	185	215	174	184	173	175	203	217	161	194	196	103	125		183
December	159	171	161	171	174	197	217	198	216	180	235	190	193	176	175	203	213	160	188	196	109	124		187
1919: Av. for year.	**164**	**174**	**164**	**169**	**167**	**201**	**205**	**199**	**234**	**193**	**182**	**177**	**193**	**174**	**179**	**218**	**213**	**174**	**224**	**205**	**145**	**129**		**186**
January	162	175	165	175	181	193	217	199	211	188	218	184	201	175	175	200	207	159	188	196	117	127		185
February	162	174	165	174	181	180	205	193	203	186	147	149	185	174	175	203	200	164	182	195	123	126		172
March	165	177	169	178	183	184	203	191	211	193	140	174	183	166	175	206	197	154	171	193	126	129		175
April	172	182	175	184	187	197	212	197	223	202	143	186	190	169	175	218	200	154	182	193	129	128		182
May	175	187	178	186	181	205	210	203	246	204	154	177	191	167	175	227	207	154	194	193	136	128		185
June	170	181	171	176	174	202	212	205	254	200	155	165	192	169	177	227	210	159	224	193	143	129		184
July	171	183	169	173	168	220	215	211	266	197	164	164	195	169	179	227	217	168	282	198	155	130		190
August	166	177	164	166	160	223	214	212	266	196	174	167	197	174	180	224	220	178	294	202	160	130		192
September	161	170	158	158	150	219	206	205	242	194	183	172	195	176	180	221	223	190	253	200	164	130		188
October	157	165	155	153	145	211	196	195	228	189	209	186	192	180	180	221	220	199	224	207	159	131		189
November	155	162	153	151	143	200	189	188	231	184	235	197	195	184	182	224	220	202	229	227	164	131		192
December	154	161	153	152	143	181	186	186	221	184	261	204	196	188	182	233	220	203	253	264	164	127		197
1920:																								
January	159	166	159	158	152	178	186	187	215	197	240	194	196	187	195	245	220	208	318	324	165	132		201
February	160	167	159	157	152	180	186	188	204	210	199	190	196	188	198	245	217	210	353	342	165	131		200
March	161	168	161	157	150	186	186	190	192	215	161	196	194	187	200	242	217	211	400	340	165	135		200
April	170	179	169	166	157	206	191	199	191	224	153	199	194	183	200	245	217	214	535	367	165	135		211

[1] No hens sold in this month by order of Food Administration.

TREND IN RETAIL COST OF 22 FOOD ARTICLES, COMBINED, FOR THE UNITED STATES, BY MONTHS, JANUARY, 1913, TO APRIL, 1920.

[Average cost for 1913=100.]



Comparison of Retail Food Costs in 51 Cities.

TABLE 4 shows for 39 cities the percentage of increase or decrease in the retail cost of 22 food articles [6] in April, 1920, compared with the average cost in the year 1913, in April, 1919, and in March, 1920. For 11 other cities comparisons are given for the one-year and one-month periods. These cities have been scheduled by the Bureau at different dates since 1913. For Savannah, Ga., the comparison is given only for the month, as this city was first scheduled by the Bureau in 1920. These percentage changes are based on actual retail prices secured each month from retail dealers and on the average family consumption of these articles in each city.[7]

TABLE 4.—PERCENTAGE CHANGES IN THE RETAIL COST OF 22 FOOD ARTICLES IN APRIL, 1920, COMPARED WITH THE COST IN MARCH, 1920, APRIL, 1919, AND WITH THE AVERAGE COST IN THE YEAR 1913, BY CITIES.

City.	Percentage increase April, 1920, compared with—			City.	Percentage increase April, 1920, compared with—		
	1913	April, 1919.	March, 1920.		1913	April, 1919.	March, 1920.
Atlanta	106	14	3	Milwaukee	118	17	6
Baltimore	113	10	6	Minneapolis	121	19	7
Birmingham	114	12	6	Mobile	.....	14	7
Boston	106	18	6	Newark	102	15	6
Bridgeport	.....	14	3	New Haven	102	14	2
Buffalo	116	17	6	New Orleans	106	12	5
Butte	.....	18	5	New York	109	16	5
Charleston	112	11	2	Norfolk	.....	10	5
Chicago	119	22	6	Omaha	122	18	7
Cincinnati	114	16	7	Peoria	.....	18	7
Cleveland	120	22	8	Philadelphia	108	14	6
Columbus	.....	16	6	Pittsburgh	112	17	7
Dallas	103	13	3	Portland, Me.	.....	10	2
Denver	105	11	5	Portland, Oreg	93	14	3
Detroit	127	22	8	Providence	107	14	2
Fall River	102	15	1	Richmond	114	12	3
Houston	.....	16	5	Rochester	.....	15	3
Indianapolis	113	20	8	St. Louis	129	21	8
Jacksonville	94	11	3	St. Paul	.....	17	5
Kansas City, Mo.	118	19	7	Salt Lake City	89	12	3
Little Rock	105	15	7	San Francisco	93	16	3
Los Angeles	86	16	4	Savannah	.....	.....	5
Louisville	106	12	8	Scranton	110	16	4
Manchester	103	13	3	Seattle	97	14	4
Memphis	114	13	5	Springfield, Ill.	.....	21	5
				Washington, D.C.	113	11	5

Retail Prices of Gas in the United States.[1]

THE following table shows for 51 cities the net price, per 1,000 cubic feet, of gas used for household purposes. Prices are, in most cases, for manufactured gas, but prices for natural gas have also been quoted for those cities where it is in general use. For Los Angeles, prices are given for natural and manufactured gas, mixed. The prices shown do not include any extra charge for service.

[6] For list of articles see note 2, p. 57.

[7] The consumption figure used for each article in each city is given in the MONTHLY LABOR REVIEW of November, 1918, pp. 94 and 95.

[1] Retail prices of gas are secured annually and are published in the June issues of the MONTHLY LABOR REVIEW.

NET PRICE, PER 1,000 CUBIC FEET, OF GAS FOR HOUSEHOLD USE ON APR. 15 OF EACH YEAR, 1913 TO 1920, BY CITIES.

Manufactured gas.

City.	Apr. 15, 1913.	Apr. 15, 1914.	Apr. 15, 1915.	Apr. 15, 1916.	Apr. 15, 1917.	Apr. 15, 1918.	Apr. 15, 1919.	Apr. 15, 1920.
Atlanta, Ga.	$1.00	$1.00	$1.00	$1.00	$1.00	$1.00	$1.15	$1.15
Baltimore, Md.	.90	.80	.80	.75	.75	.75	.75	.75
Birmingham, Ala.	1.00	.95	.95	.95	.95	.95	.95	.95
Boston, Mass.	.82	.82	.80	.80	.80	.85	1.02	1.07
Bridgeport, Conn.	1.00	1.00	1.00	1.00	1.00	1.00	1.10	1.10
Buffalo, N. Y.	1.00	1.00	1.00	1.00	1.00	1.00	1.45	1.45
Butte, Mont.	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
Charleston, S. C.	1.10	1.10	1.10	1.10	1.00	1.10	1.10	1.25
Chicago, Ill.	.80	.80	.80	.80	.80	.755	.94	.90
Cleveland, Ohio.	.80	.80	.80	.80	.80	.80	.80	.80
Denver, Colo.	.85	.80	.80	.80	.80	.85	.95	.95
Detroit, Mich.	.75	.75	.75	.75	.75	.75	.79	.79
Fall River, Mass.	.80	.80	.80	.80	.80	.95	.95	1.05
Houston, Tex.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Indianapolis, Ind.	.60	.55	.55	.55	.55	.55	.60	.60
Jacksonville, Fla.	1.20	1.20	1.15	1.15	1.15	1.25	1.25	1.50
Manchester, N. H.	1.10	1.10	1.00	1.00	1.00	1.00	1.10	1.10
Memphis, Tenn.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.10
Milwaukee, Wis.	.75	.75	.75	.75	.75	.75	.75	.75
Minneapolis, Minn.	.85	.80	.80	.77	.77	.77	.95	.95
Mobile, Ala.	1.10	1.10	1.10	1.10	1.10	1.10	1.35	1.35
Newark, N. J.	1.00	.90	.90	.90	.90	.97	.97	1.15
New Haven, Conn.	.90	.90	.90	.90	.90	1.00	1.10	1.10
New Orleans, La.	1.10	1.00	1.00	1.00	1.00	1.00	1.30	1.30
New York, N. Y.	.80	.80	.80	.80	.80	.80	.80	.80
Norfolk, Va.	1.00	1.00	1.00	1.00	1.00	1.20	1.20	1.60
Omaha, Nebr.	1.15	1.15	1.15	1.00	1.00	1.15	1.15	1.15
Peoria, Ill.	.90	.90	.90	.90	.85	.85	.85	.85
Philadelphia, Pa.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Pittsburgh, Pa.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	[1]
Portland, Me.	1.10	1.00	1.00	1.00	1.00	1.00	1.40	1.40
Portland, Oreg.	.95	.95	.95	.95	.95	.95	.95	.95
Providence, R. I.	.85	.85	.85	.85	.85	1.00	1.30	1.30
Richmond, Va.	.90	.90	.90	.80	.80	.80	1.00	1.00
Rochester, N. Y.	.95	.95	.95	.95	.95	.95	.95	.95
St. Louis, Mo.	.80	.80	.80	.80	.75	.75	.75	.85
St. Paul, Minn.	.95	.90	.90	.85	.85	.85	.85	.85
Salt Lake City, Utah.	.90	.90	.90	.90	.90	.90	1.10	1.30
San Francisco, Calif.	.75	.85	.85	.85	.85	.85	.95	.95
Savannah, Ga.	.....	.....	.....	.....	.....	.....	.....	1.25
Scranton, Pa.	1.08	1.08	1.08	1.08	1.08	1.15	1.30	1.30
Seattle, Wash.	1.00	1.00	1.00	1.00	1.00	1.25	1.25	1.50
Springfield, Ill.	1.00	1.00	1.00	1.00	1.00	1.00	1.10	1.10
Washington, D. C.	.93	.93	.93	.93	.80	.90	.95	.95

Natural gas.

Buffalo, N. Y.	$0.30	$0.30	$0.30	$0.30	$0.30	$0.30	$0.30	$0.35
Cincinnati, Ohio.	.30	.30	.30	.30	.30	.35	.35	.35
Cleveland, Ohio.	.30	.30	.30	.30	.30	.30	.35	.35
Columbus, Ohio.	.....	.....	.....	.....	.30	.30	.30	.30
Dallas, Tex.	.45	.45	.45	.45	.45	.45	.45	.45
Kansas City, Mo.	.27	.27	.27	.27	.30	.60	.80	.80
Little Rock, Ark.	.40	.40	.40	.40	.40	.40	.45	.45
Louisville, Ky.	.....	.62	.65	.65	.65	.65	.65	.65
Pittsburgh, Pa.	.28	.28	.28	.28	.28	.28	.35	.35

Manufactured and natural gas.

Los Angeles, Calif.	.....	.....	$0.68	$0.68	$0.68	$0.68	$0.75	$0.75

[1] Sale of manufactured gas discontinued.

From the prices quoted on manufactured gas in 43 cities, average prices have been computed for the 43 cities combined and are shown for April 15 of each year from 1913 to 1920 in the next table. Relative prices have been computed by dividing the price in April of each year by the price in April, 1913.

As may be seen in the table, the price of manufactured gas has changed but little since 1913, being only 15 per cent higher in April, 1920, than in April, 1913, and until 1918 being less than in 1913.

AVERAGE[1] AND RELATIVE PRICES OF MANUFACTURED GAS FOR HOUSEHOLD USE, PER 1,000 CUBIC FEET, ON APR. 15 OF EACH YEAR, 1913 TO 1920, FOR 43 CITIES COMBINED.

[Average price in April, 1913=100.]

Year.	Average price.	Relative price.	Year.	Average price.	Relative price.
April, 1913	$0.95	100	April, 1917	$0.92	97
April, 1914	.94	99	April, 1918	.95	100
April, 1915	.94	99	April, 1919	1.03	108
April, 1916	.93	98	April, 1920	1.09	115

[1] Net price.

Index Numbers of Wholesale Prices in the United States.

LARGE increases again took place in the wholesale prices of many important commodities during the month of April, according to information collected in representative markets by the United States Bureau of Labor Statistics. The Bureau's weighted index number, which registered 253 in March, rose to 265 in April. This represents an advance of nearly 4¾ per cent.

The most notable examples of price increase were found in the group of fuel and lighting materials, the increase in this group as a whole being 11 per cent. Bituminous coal and coke were responsible in large measure for the results shown. Food followed next with an increase of 9¾ per cent, due largely to the recent sharp advance in sugar and potatoes. In the group of lumber and building materials prices continued steeply upward, with an increase of 5¼ per cent over March. The groups of farm products and chemicals each showed an increase of over 3 per cent, while smaller increases were recorded for metals and metal products and for house-furnishing goods.

An increase of nearly 3½ per cent in April prices over those of March was found in the group of miscellaneous commodities, including such important articles as bran, mill-feed middlings, lubricating oil, newsprint and wrapping paper, and wood pulp. In only one group, that of cloths and clothing, was there a net decrease in prices from March to April. This decrease, which amounted to less than 1 per cent for the group, was due entirely to the decline in raw silk and leather.

The following table shows the more important price changes occurring between March and April, as measured by average prices for each month:

IMPORTANT ARTICLES INCREASING OR DECREASING IN AVERAGE PRICE IN APRIL, AS COMPARED WITH MARCH, 1920, BY GROUPS OF COMMODITIES.

Increases.

Commodity.	Per cent.
Farm products.	
Cotton:	
New Orleans	2.1
New York	2.4
Barley, Chicago	9.1
Corn, Chicago	8.5
Oats, Chicago	11.3
Rye, Chicago	15.1
Wheat:	
No. 1 northern spring, Chicago	13.9
No. 2 red winter, Chicago	10.9
No. 2 hard winter, Kansas City	9.6
No. 1 northern spring, Minneapolis	9.1
Bluestem, Portland, Oreg	4.9
Timothy hay, Chicago	21.0
Hops:	
New York	18.2
Pacifics, Portland, Oreg	19.0
Hogs, Chicago	2.0
Sheep, Chicago:	
Ewes	5.4
Lambs	4.4
Wethers	6.7
Food, etc.	
Butter, creamery, extra:	
New York	7.5
Philadelphia	4.5
Rye flour, Minneapolis	17.1
Wheat flour, patent:	
Kansas City	4.0
Minneapolis	8.5
St. Louis	4.5
Toledo	9.5
Food, etc.—Concluded.	
Corn meal:	
Terre Haute	9.4
Philadelphia	18.7
Mutton, New York	28.2
Dressed poultry:	
Chicago	8.1
New York	6.8
Sugar, raw, New York	49.0
Potatoes, Chicago	29.1
Cloths and clothing.	
Print cloths, Boston	8.2
Linen shoe thread, New York	5.5
Fuel and lighting.	
Alcohol, denatured, New York	12.6
Coal, bituminous:	
Mine run, Chicago	20.8
Prepared sizes, Chicago	21.3
Screenings, Chicago	11.7
Mine run, Cincinnati	34.2
Mine run, St. Louis	11.1
Coal, semibituminous:	
New River, Cincinnati	36.1
Pocahontas, Norfolk	39.9
Coke, furnace, Connellsville	75.0
Petroleum:	
Crude, California wells	8.5
Refined 110°, New York	3.3
Refined 150°, New York	4.0
Metals and metal products.	
Pig iron:	
Basic, valley furnace	2.2
Metals and metal products—Concluded.	
Pig iron—Concluded.	
No. 2, foundry, Pittsburgh	3.7
Structural steel, Chicago	6.1
Lumber and building materials.	
Brick, Cincinnati	6.7
Cement, Portland, New York	4.7
Lime, common, New York	5.8
Lumber, New York:	
Maple	11.1
Yellow pine flooring	15.1
Turpentine, New York	15.1
Chemicals and drugs.	
Acetic acid, New York	32.0
Muriatic acid, New York	7.5
Nitric acid, New York	7.1
Wood alcohol, New York	12.8
Opium, New York	10.0
Caustic soda, New York	11.7
Soda ash, New York	19.4
House-furnishing goods.	
Oak rocking chairs, Chicago	13.0
Miscellaneous.	
Bran, Minneapolis	7.7
Mill-feed middlings, Minneapolis	5.9
Wrapping paper, New York	11.1
Manila rope, New York	5.4
Wood pulp, New York	49.5

Decreases.

Commodity.	Per cent.
Farm products.	
Flaxseed, Minneapolis	6.9
Cattle, Chicago	4.3
Tobacco, Louisville	5.4
Food, etc.	
Eggs, fresh, firsts:	
Boston	4.9
Chicago	8.0
Food, etc.—Continued.	
Eggs, fresh, firsts—Con.	
Cincinnati	10.3
New York	9.3
Philadelphia	8.9
Herring, pickled, New York	18.4
Lemons, Chicago	19.1
Raisins, New York	5.0
Lard, New York	4.6
Food, etc.—Concluded.	
Milk, fresh:	
Chicago	4.6
New York	22.3
Oleo oil, Chicago	7.7
Cloths and clothing.	
Leather, side, Boston	14.7
Raw silk, New York	13.5

Measured by changes in the index numbers for the 12 months from April, 1919, to April, 1920, farm products increased 4.7 per cent in price, food 28 per cent, and cloths and clothing 62.7 per cent. During the same time fuel and lighting increased 27½ per cent, metals and metal products over 28 per cent, and lumber and building materials 110½ per cent in price. Chemicals and drugs increased 19 per cent, house-furnishing goods 52½ per cent, and miscellaneous commodities over 10 per cent in average price. All commodities, considered in the aggregate, increased 30½ per cent in price.

INDEX NUMBERS OF WHOLESALE PRICES IN SPECIFIED YEARS AND MONTHS, 1913 TO APRIL, 1920, BY GROUPS OF COMMODITIES.

[1913=100.]

Year and month.	Farm products.	Food, etc.	Cloths and clothing.	Fuel and lighting.	Metals and metal products.	Lumber and building materials.	Chemicals and drugs.	House furnishing goods.	Miscellaneous.	All commodities.
1913	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**
January	97	99	100	103	107	100	101	100	100	100
April	97	96	100	98	102	101	101	100	98	98
July	101	102	100	99	98	101	99	100	101	100
October	103	102	100	100	99	98	100	100	100	101
1914	103	103	98	96	87	97	101	99	99	100
January	101	102	98	99	92	98	100	99	99	100
April	103	95	99	98	91	99	100	99	101	98
July	104	104	99	95	85	97	99	99	97	100
October	103	107	97	93	83	96	105	99	96	99
1915	105	104	100	93	97	94	114	99	99	101
January	102	106	96	93	83	94	103	99	100	99
April	107	105	99	89	91	94	102	99	99	100
July	108	104	99	90	102	93	108	99	98	101
October	105	103	103	96	100	93	124	99	99	101
1916	122	126	128	119	148	101	159	115	120	124
January	108	113	110	105	126	99	150	105	107	110
April	114	117	119	108	147	101	172	108	110	117
July	118	121	126	108	145	99	156	121	120	119
October	136	140	138	133	151	101	150	124	132	134
1917	189	176	181	175	208	124	198	144	155	176
January	148	150	161	176	183	106	159	132	138	151
April	181	182	169	184	208	114	170	139	149	172
July	199	181	187	192	257	132	198	152	153	186
October	208	183	193	146	182	134	252	152	163	181
1918	220	189	239	163	181	151	221	196	193	196
January	207	187	211	157	174	136	232	161	178	185
February	208	186	216	157	176	138	232	161	181	186
March	212	177	223	158	176	144	232	165	184	187
April	217	178	232	157	177	146	229	172	191	190
May	214	177	237	160	178	148	223	173	194	190
June	217	179	245	159	178	150	219	198	196	193
July	224	184	249	166	184	154	216	199	190	198
August	230	191	252	166	185	157	222	221	191	202
September	237	199	255	167	184	159	220	226	194	207
October	224	201	257	167	187	158	218	226	196	204
November	221	206	256	171	188	164	215	226	203	206
December	222	210	250	171	184	164	195	227	204	206
1919	234	210	261	173	161	192	179	236	217	212
January	222	207	234	170	172	161	191	218	212	203
February	218	196	223	169	168	163	185	218	208	197
March	228	203	216	168	162	165	183	218	217	201
April	235	211	217	167	152	162	178	217	216	203
May	240	214	228	167	152	164	179	217	213	207
June	231	204	258	170	154	175	174	233	212	207
July	246	216	282	171	158	186	171	245	221	218
August	243	227	304	175	165	208	172	259	225	226
September	226	211	306	181	160	227	173	262	217	220
October	230	211	313	181	161	231	174	264	220	223
November	240	219	325	179	164	236	176	299	220	230
December	244	234	335	181	169	253	179	303	220	238
1920:										
January	246	253	350	184	177	268	189	324	227	248
February	237	244	356	187	189	300	197	329	227	249
March	239	246	356	192	192	324	205	329	230	253
April[1]	246	270	353	213	195	341	212	331	238	265

[1] Preliminary.

Price Changes, Wholesale and Retail, of Important Food Articles in Selected Cities.

CONTINUING information published in previous issues of the MONTHLY LABOR REVIEW, the trend of wholesale and retail prices since 1913 for a number of important food products is shown herewith. Exact comparison of wholesale with retail prices is not attempted in the tables. Some food products—fresh meats, for example—are not sold by the retailer in the same form in which they leave the wholesaler, hence strictly comparable prices are not obtainable. It was found impracticable also to obtain both wholesale and retail prices for the same date, the retail prices being those prevailing on the 15th of the month, while the wholesale prices are for a variable date, usually several days prior to the 15th. The figures in the table are therefore to be considered as merely indicative of price variations in the retail as compared with the wholesale markets.

To assist in comparing the fluctuations at wholesale and at retail, the differential between the two series of quotations at successive dates is given. It should not be assumed, however, that this differential in any case represents the margin of profit to the retailer, since, in addition to a possible difference of grade between the articles shown at wholesale and retail, the various items of handling cost to both the wholesaler and retailer are included in the figure.

WHOLESALE AND RETAIL PRICES OF IMPORTANT FOOD ARTICLES IN SELECTED CITIES.

[The initials W—wholesale, R—retail. The wholesale price is the mean of the high and low quotation on the date selected, as published in leading trade journals. The retail price is the average of prices reported to the Bureau of Labor Statistics by dealers.]

Article and city.	Unit.	1913: Average for year.	July—					1919			1920			
			1914	1915	1916	1917	1918	Jan.	July.	Oct.	Jan.	Feb.	Mar.	Apr.
		Cts.	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*
Beef, Chicago:														
Steer loin ends (hip).W.	Lb..	16.8	17.5	16.0	20.5	19.0	34.0	32.0	27.0	33.0	32.0	30.0	32.0	32.0
Sirloin steak.....R.	Lb..	23.2	26.0	25.8	28.1	30.2	37.7	37.5	39.3	36.6	37.2	37.2	39.4	40.9
Price differential.....	.....	6.4	8.5	9.8	7.6	11.2	3.7	5.5	12.3	3.6	5.2	7.2	7.4	8.9
Beef, Chicago:														
Steer rounds, No. 2.W.	Lb..	13.1	14.5	14.3	14.5	17.0	25.0	22.0	22.0	21.0	20.0	20.0	19.0	19.0
Round steak.....R.	Lb..	20.2	23.3	22.8	24.1	26.6	35.0	34.0	35.5	32.5	32.0	31.8	33.7	34.6
Price differential.....	.....	7.1	8.8	8.5	9.6	9.6	10.0	12.0	13.5	11.5	12.0	11.8	14.7	15.6
Beef, Chicago:														
Steer ribs, No. 2.....W.	Lb..	15.7	16.5	14.5	17.5	20.0	28.0	30.0	24.0	28.0	35.0	30.0	25.0	27.0
Rib roast.....R.	Lb..	19.5	21.2	21.3	22.9	24.6	31.8	[1] 31.3	31.9	[1] 28.9	[1] 30.1	30.4	33.1	34.0
Price differential.....	.....	3.8	4.7	6.8	5.4	4.6	3.8	.....	7.9	.....	.....	.4	8.1	7.0
Beef, New York:														
No. 2 loins, city.....W.	Lb..	15.8	18.3	17.0	20.0	19.0	28.0	37.0	28.5	37.0	37.0	37.0	34.0	34.0
Sirloin steak.....R.	Lb..	25.9	27.4	28.2	29.4	33.7	43.9	44.8	44.4	42.6	43.3	43.4	42.4	45.8
Price differential.....	.....	10.1	9.1	11.2	9.4	14.7	15.9	7.8	15.9	5.6	6.3	6.4	8.4	11.8
Beef, New York:														
No. 2 rounds, city...W.	Lb..	12.1	13.5	13.5	14.5	17.5	28.0	25.0	22.0	22.0	21.0	20.0	19.0	20.5
Round steak.....R.	Lb..	24.9	27.0	27.1	28.9	33.7	46.3	47.3	46.2	44.5	44.6	44.4	43.1	46.4
Price differential.....	.....	12.8	13.5	13.6	14.4	16.2	18.3	22.3	24.2	22.5	23.6	24.4	24.1	25.9
Beef, New York:														
No. 2 ribs, city.....W.	Lb..	15.1	16.5	16.0	18.0	19.0	28.0	35.0	27.5	30.0	31.0	29.0	27.0	27.0
Rib roast.....R.	Lb..	21.8	22.5	22.7	24.3	27.9	37.5	40.9	38.6	37.2	38.4	38.4	38.0	40.6
Price differential.....	.....	6.7	6.0	6.7	6.3	8.9	9.5	5.9	11.1	7.2	7.4	9.4	11.0	13.6
Pork, Chicago:														
Loins.....W.	Lb..	14.9	16.5	15.0	16.5	25.0	29.0	27.0	37.0	35.0	25.0	29.0	30.0	32.0
Chops.....R.	Lb..	19.0	20.4	20.1	21.7	29.2	35.5	35.2	41.7	41.0	32.4	35.7	38.1	43.1
Price differential.....	.....	4.1	3.9	5.1	5.2	4.2	6.5	8.2	4.7	6.0	7.4	6.7	8.1	11.1
Pork, New York:														
Loins, western.....W.	Lb..	15.2	16.3	15.3	16.5	23.5	30.5	33.0	37.0	39.0	29.0	26.0	28.0	29.0
Chops.....R.	Lb..	21.7	23.0	21.7	23.9	32.6	40.6	43.5	47.5	45.7	39.9	40.6	41.2	44.8
Price differential.....	.....	6.5	6.7	6.4	7.4	9.1	10.1	10.5	10.5	6.7	10.9	14.6	13.2	15.8
Bacon, Chicago:														
Short clear sides....W.	Lb..	12.7	13.9	11.3	15.9	24.7	27.4	29.4	33.1	23.3	21.6	22.6	20.9	21.6
Sliced.....R.	Lb..	29.4	31.8	31.5	32.8	43.9	54.7	61.6	61.5	54.6	53.1	53.9	54.6	56.4
Price differential.....	.....	16.7	17.9	20.2	16.9	19.2	27.3	32.2	28.4	31.3	31.5	31.3	33.7	34.8
Ham, Chicago:														
Smoked.....W.	Lb..	16.6	17.5	16.3	19.0	24.3	30.1	35.3	38.3	29.3	28.9	30.3	30.5	32.5
Smoked, sliced.....R.	Lb..	26.6	33.8	32.8	34.9	41.4	49.1	55.3	58.8	54.0	51.8	51.9	53.1	55.6
Price differential.....	.....	10.0	16.3	16.5	15.9	17.1	19.0	20.0	20.5	26.7	22.9	21.6	22.6	23.1
Lard, New York:														
Prime, contract.....W.	Lb..	11.0	10.4	8.0	13.3	20.1	26.2	24.2	35.8	29.0	24.5	20.8	21.1	19.3
Pure, tub.....R.	Lb..	16.0	15.6	15.1	16.8	27.4	32.2	33.1	42.5	35.7	33.8	32.9	31.2	30.4
Price differential.....	.....	5.0	5.2	7.1	3.5	7.3	6.0	8.9	6.7	6.7	9.3	12.1	10.1	11.1
Lamb, Chicago:														
Dressed, round.....W.	Lb..	14.9	17.0	19.0	19.0	26.0	31.0	28.0	29.0	24.0	29.0	34.0	31.0	33.0
Leg of, yearling.....R.	Lb..	19.8	21.9	20.8	23.1	28.7	35.7	34.2	36.2	33.1	37.0	39.3	40.4	41.7
Price differential.....	.....	4.9	4.9	1.8	4.1	2.7	4.7	6.2	7.2	9.1	8.0	5.3	9.4	8.7
Poultry, New York:														
Dressed fowls.....W.	Lb..	18.2	18.8	17.5	21.5	24.8	36.0	35.5	34.5	37.8	35.3	38.8	38.8	39.0
Dressed hens.....R.	Lb..	21.4	22.0	21.9	25.6	28.7	41.0	40.8	41.5	40.5	40.3	43.5	43.5	45.0
Price differential.....	.....	3.2	3.2	4.4	4.1	3.9	5.0	5.3	7.0	2.7	5.0	4.7	4.7	6.0
Butter, Chicago:														
Creamery, extra....W.	Lb..	31.0	26.5	26.5	27.5	37.5	42.5	66.0	52.0	63.5	62.0	59.0	65.5	60.0
Creamery, extra.....R.	Lb..	36.2	31.2	32.2	33.5	43.3	48.0	71.3	57.1	67.8	69.0	66.4	73.9	71.0
Price differential.....	.....	5.2	4.7	5.7	6.0	5.7	5.5	5.3	5.1	4.3	7.0	7.4	8.4	11.0
Butter, New York:														
Creamery, extra....W.	Lb..	32.3	28.0	27.0	28.5	39.5	44.4	67.0	51.0	66.8	63.8	67.0	65.8	75.0
Creamery, extra.....R.	Lb..	38.2	32.8	33.6	34.6	45.3	51.4	75.5	61.3	72.4	75.2	75.6	75.1	80.0
Price differential.....	.....	5.9	4.8	6.6	6.1	5.8	7.0	8.5	10.3	5.6	11.4	8.6	9.3	5.0
Butter, San Francisco:														
Creamery, extra....W.	Lb..	31.7	24.5	26.5	25.5	38.5	50.0	64.5	56.5	66.0	61.0	63.5	63.0	58.5
Creamery, extra.....R.	Lb..	38.8	32.9	33.8	33.3	45.5	56.6	72.3	64.7	73.5	70.9	71.9	69.6	64.2
Price differential.....	.....	7.1	8.4	7.3	7.8	7.0	6.6	7.8	8.2	7.5	9.9	8.4	6.6	5.7
Cheese, Chicago:														
Whole milk.....W.	Lb..	14.2	13.3	14.5	14.5	21.6	22.7	36.3	30.9	27.4	30.4	27.6	28.3	27.9
Full cream.....R.	Lb..	.....	.....	22.9	24.2	33.9	34.5	43.9	44.1	44.4	44.9	44.3	44.9	44.3
Price differential.....	.....	.....	.....	8.4	9.7	12.3	11.8	7.6	13.2	17.0	14.5	16.7	16.6	16.4

[1] Price is for different quality of beef from that quoted at wholesale.

WHOLESALE AND RETAIL PRICES OF IMPORTANT FOOD ARTICLES IN SELECTED CITIES—Concluded.

Article and city.	Unit.	1913: Average for year.	July—					1919			1920			
			1914	1915	1916	1917	1918	Jan.	July.	Oct.	Jan.	Feb.	Mar.	Apr.
Cheese, New York:		Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.
Whole milk, State..W.	Lb..	15.4	14.4	14.6	15.1	23.8	23.9	36.8	31.5	30.3	31.4	30.0	28.5	28.5
Full cream.....R.	Lb..	.....	.....	22.9	22.8	32.8	33.2	42.7	42.8	42.3	43.3	43.4	42.9	42.7
Price differential.....	.....	.....	.....	8.3	7.7	9.0	9.3	5.9	11.3	12.0	11.9	13.4	14.4	14.2
Cheese, San Francisco:														
Fancy.....W.	Lb..	15.9	12.5	11.5	13.5	20.0	26.0	33.5	32.0	33.0	32.5	31.0	33.5	25.5
Full cream.....R.	Lb..	.....	.....	20.0	22.9	29.7	32.3	41.9	41.2	44.7	43.2	42.1	42.0	40.6
Price differential.....	.....	.....	.....	8.5	9.4	9.7	6.3	8.4	9.2	11.7	10.7	11.1	8.5	15.1
Milk, Chicago:														
Fresh.....W.	Qt..	3.8	3.6	3.7	3.6	4.7	5.3	8.4	6.8	8.2	8.1	7.6	6.7	6.4
Fresh, bottled[2].....R.	Qt..	8.0	8.0	8.0	8.1	10.0	12.0	14.0	14.0	15.0	15.0	15.0	14.0	14.0
Price differential.....	.....	4.2	4.4	4.3	4.5	5.3	6.7	5.6	7.2	6.8	6.9	7.4	7.3	7.6
Milk, New York:														
Fresh.....W.	Qt..	3.5	3.0	3.0	3.1	5.0	5.4	9.2	7.1	7.3	8.5	8.1	7.9	6.1
Fresh, bottled[2].....R.	Qt..	9.0	9.0	9.0	9.0	11.4	12.7	16.0	16.0	16.0	18.0	16.7	16.7	15.0
Price differential.....	.....	5.5	6.0	6.0	5.9	6.4	7.3	6.8	8.9	8.7	9.5	8.6	8.8	8.9
Milk, San Francisco:														
Fresh.....W.	Qt..	3.8	3.9	3.8	3.8	4.3	5.9	7.4	7.4	7.4	8.4	8.4	8.4	8.4
Fresh, bottled.....R.	Qt..	10.0	10.0	10.0	10.0	10.0	12.1	14.0	14.0	14.2	15.8	15.8	15.8	15.8
Price differential.....	.....	6.1	6.1	6.2	6.2	5.7	6.2	6.6	6.6	6.8	7.4	7.4	7.4	7.4
Eggs, Chicago:														
Fresh, firsts.....W.	Doz.	22.6	18.8	16.8	21.8	31.0	36.5	58.8	42.0	56.8	68.5	50.0	45.1	40.0
Strictly fresh.....R.	Doz.	29.2	26.1	24.8	29.6	40.6	45.7	69.5	53.2	65.6	77.8	62.6	55.0	51.0
Price differential.....	.....	6.6	7.3	8.0	7.8	9.6	9.2	10.7	11.2	8.8	9.3	12.6	9.9	11.0
Eggs, New York:														
Fresh, firsts.....W.	Doz.	24.9	21.5	20.0	24.1	35.0	40.0	61.3	44.5	61.0	77.5	57.5	45.5	46.3
Strictly fresh.....R.	Doz.	39.7	35.3	32.6	37.2	47.7	57.3	78.1	66.4	80.0	95.8	77.8	64.0	62.9
Price differential.....	.....	14.8	13.8	12.6	13.1	12.7	17.3	16.8	21.9	19.0	18.3	20.3	18.5	16.6
Eggs, San Francisco:														
Fresh.....W.	Doz.	26.8	23.0	22.0	24.0	32.0	44.0	53.0	45.0	59.5	54.5	45.0	36.0	38.5
Strictly fresh.....R.	Doz.	37.3	33.8	31.0	33.3	39.2	51.4	65.7	56.6	79.1	68.9	53.1	47.4	47.3
Price differential.....	.....	10.5	10.8	9.0	9.3	7.2	7.4	12.7	11.6	9.6	14.4	8.1	11.4	8.8
Meal, corn, Chicago:														
Fine.....W.	Lb..	1.4	1.6	.....	1.9	4.5	5.4	3.6	4.6	3.6	3.7	3.4	3.7	4.0
Fine.....R.	Lb..	2.9	2.8	3.1	3.1	5.8	6.8	5.8	6.1	6.7	6.6	6.7	6.9	7.1
Price differential.....	.....	1.5	1.2	.....	1.2	1.3	1.4	2.2	1.5	3.1	2.9	3.3	3.2	3.1
Beans, New York:														
Medium, choice.....W.	Lb..	4.0	4.0	5.8	9.8	15.4	11.9	9.9	7.5	7.9	7.9	8.0	7.9	7.5
Navy, white.....R.	Lb..	.....	.....	8.1	11.3	18.8	17.5	15.3	12.2	12.3	12.5	12.5	12.3	12.4
Price differential.....	.....	.....	.....	2.3	1.5	3.4	5.6	5.4	4.7	4.4	4.6	4.5	4.4	4.9
Potatoes, Chicago:														
White[3].....W.	Lb..	1.0	2.4	.7	1.6	4.4	1.5	1.9	1.4	2.2	4.3	4.3	5.5	7.0
White.....R.	Lb..	1.5	2.7	1.2	2.3	5.0	3.7	2.7	5.0	3.4	5.2	5.8	6.6	8.8
Price differential.....	.....	.5	.3	.5	.7	.6	2.2	.8	3.6	1.2	.9	1.5	1.1	1.8
Rice, New Orleans:														
Head.....W.	Lb..	5.0	5.4	4.9	4.6	7.1	9.3	9.1	10.5	12.4	12.6	12.8	12.5	12.3
Head.....R.	Lb..	.....	.....	7.5	7.4	10.1	11.9	12.0	14.2	14.8	16.0	16.1	16.2	16.4
Price differential.....	.....	.....	.....	2.6	2.8	3.0	2.6	2.9	3.7	2.4	3.4	3.3	3.7	4.1
Sugar, New York:														
Granulated.....W.	Lb..	4.3	4.2	5.9	7.5	7.4	7.4	8.8	8.8	8.8	15.7	14.7	13.7	18.1
Granulated.....R.	Lb..	4.9	4.6	6.3	7.9	8.4	8.8	10.1	10.0	10.8	17.3	17.9	17.3	19.1
Price differential.....	.....	.6	.4	.4	.4	1.0	1.4	1.3	1.2	2.0	1.6	3.2	3.6	1.0

[2] Delivered.

[3] Good to choice.

RELATIVE WHOLESALE AND RETAIL PRICES OF IMPORTANT FOOD ARTICLES IN SELECTED CITIES.

[Average for 1913=100.]

Article and city.	Average for 1913.	July—					1919			1920			
		1914	1915	1916	1917	1918	Jan.	July.	Oct.	Jan.	Feb.	Mar.	Apr.
Beef, Chicago:													
Steer loin ends (hip) ....W..	100	104	95	122	113	202	190	161	196	190	179	190	190
Sirloin steak.....R..	100	112	111	121	130	163	162	169	158	160	160	170	176
Beef, Chicago:													
Steer rounds, No. 2.....W..	100	111	109	111	130	191	168	168	160	153	153	145	145
Round steak.....R..	100	115	113	119	132	173	168	176	161	158	157	167	171
Beef, Chicago:													
Steer ribs, No. 2.....W..	100	105	92	111	127	178	191	153	178	223	191	159	172
Rib roast.....R..	100	109	109	117	126	163	159	164	148	154	156	170	174
Beef, New York:													
No. 2 loins, city.....W..	100	116	108	127	120	177	234	180	234	234	234	215	215
Sirloin steak.....R..	100	106	109	114	130	170	173	171	164	167	168	164	177
Beef, New York:													
No. 2 rounds, city.....W..	100	112	112	120	145	231	207	182	182	174	165	157	169
Round steak.....R..	100	108	109	116	135	186	190	186	179	179	178	173	186
Beef, New York:													
No. 2 ribs, city.....W..	100	109	106	119	126	185	232	182	199	205	192	179	179
Rib roast.....R..	100	103	104	111	128	172	188	177	171	176	176	174	186
Pork, Chicago:													
Loins.....W..	100	111	101	111	168	195	181	248	235	168	195	201	215
Chops.....R..	100	107	106	114	154	187	185	219	216	171	188	201	227
Pork, New York:													
Loins, western.....W..	100	107	101	109	155	201	217	243	257	191	171	184	191
Chops.....R..	100	106	100	110	150	187	200	219	211	184	187	190	206
Bacon, Chicago:													
Short clear sides.....W..	100	109	89	125	194	216	232	261	183	170	178	165	170
Sliced.....R..	100	108	107	112	149	186	210	209	186	181	183	186	192
Ham, Chicago:													
Smoked.....W..	100	105	98	114	146	181	213	231	177	174	183	184	196
Smoked, sliced.....R..	100	127	123	131	156	185	208	221	203	195	195	200	209
Lard, New York:													
Prime, contract.....W..	100	95	73	121	183	238	220	325	264	223	189	192	175
Pure, tub.....R..	100	98	94	105	171	201	207	266	223	211	206	195	190
Lamb, Chicago:													
Dressed, round.....W..	100	114	128	128	174	208	188	195	161	195	228	208	221
Leg of, yearling.....R..	100	111	105	117	145	180	173	183	167	187	198	204	211
Poultry, New York:													
Dressed fowls.....W..	100	103	96	118	136	198	195	190	208	194	213	213	214
Dressed hens.....R..	100	103	103	120	134	192	191	194	189	188	203	203	210
Butter, Chicago:													
Creamery, extra.....W..	100	85	85	89	121	137	213	168	205	200	190	211	194
Creamery, extra.....R..	100	86	89	93	119	133	197	158	187	191	183	204	196
Butter, New York:													
Creamery, extra.....W..	100	87	84	88	122	137	207	158	207	198	207	204	232
Creamery, extra.....R..	100	96	88	91	119	135	198	160	190	197	198	197	209
Butter, San Francisco:													
Creamery, extra.....W..	100	77	84	80	121	158	203	178	208	192	200	199	185
Creamery, extra.....R..	100	85	87	86	117	146	186	167	189	183	185	179	165
Milk, Chicago:													
Fresh.....W..	100	95	97	95	124	139	221	179	216	213	200	176	168
Fresh, bottled, delivered.R..	100	100	100	101	125	150	175	175	188	188	188	175	175
Milk, New York:													
Fresh.....W..	100	86	86	89	143	154	263	203	209	243	231	226	174
Fresh, bottled, delivered.R..	100	100	100	100	127	141	178	178	178	200	186	186	167
Milk, San Francisco:													
Fresh.....W..	100	100	97	97	110	151	190	190	190	215	215	215	215
Fresh, bottled.....R..	100	100	100	100	100	121	140	140	142	158	158	158	158
Eggs, Chicago:													
Fresh, firsts.....W..	100	83	74	96	137	162	260	186	251	303	221	200	177
Strictly fresh.....R..	100	89	85	101	139	137	238	182	225	266	214	188	175
Eggs, New York:													
Fresh, firsts.....W..	100	86	80	97	141	161	246	179	245	311	231	183	186
Strictly fresh.....R..	100	89	82	94	120	144	197	167	202	241	196	161	158
Eggs, San Francisco:													
Fresh.....W..	100	86	82	90	119	164	198	168	222	203	168	134	144
Strictly fresh.....R..	100	91	83	89	105	138	176	152	212	185	142	127	127
Meal, corn, Chicago:													
Fine.....W..	100	114	.....	136	321	386	257	329	257	264	243	264	286
Fine.....R..	100	97	107	107	200	234	200	210	231	228	231	238	245
Potatoes, Chicago:													
White, good to choice....W..	100	237	66	160	429	150	190	140	220	430	430	550	700
White.....R..	100	182	78	151	331	247	180	333	227	347	387	440	587
Sugar, New York:													
Granulated.....W..	100	98	137	174	172	172	205	205	205	365	342	319	421
Granulated.....R..	100	94	129	161	171	180	206	204	220	353	365	353	390

Wholesale Prices in the United States and Foreign Countries, 1913 to March, 1920.

IN THE following table the more important index numbers of wholesale prices in the United States and several foreign countries, as compiled by recognized authorities, have been reduced to a common base in order that the trend of prices in the several countries may be directly compared. The results here shown have been obtained by merely shifting the base for each series of index numbers to the year 1913; i. e., by dividing the index for 1913 on the original base into the index for each year or month on that base. These results are therefore to be regarded only as approximations of the correct index numbers in the case of series constructed by averaging the relative prices of individual commodities.[1] This applies to the index numbers of the Department of Labor of Canada and the Statistique Générale of France. The index numbers of the United States Bureau of Labor Statistics, the British Board of Trade, and the Bureau of Census and Statistics of Australia are built on aggregates of actual money prices, or relatives made from such aggregates of actual prices, and therefore can readily be shifted to any desired base. The validity of the comparison is also affected by the wide difference in the number of commodities included.

[1] For a discussion of index numbers constructed according to this method, see Bulletin No. 181 of the Bureau of Labor Statistics, pp. 245-252.

WHOLESALE PRICES IN THE UNITED STATES AND CERTAIN FOREIGN COUNTRIES.

[Index numbers expressed as percentages of the index number for 1913. See text explanation.]

Year and month.	United States: Bureau of Labor Statistics; 328 commodities (variable).	Canada: Department of Labor; 272 commodities (variable).	United Kingdom: Board of Trade; 47 commodities.	France: Statistique Générale; 45 commodities.	Sweden: Svensk Handelstidning; number of commodities not stated.	Australia: Bureau of Census and Statistics; 92 commodities.
1913	100	100	100	100	100	100
1914	100	100	101	102	116	106
1915	101	110	124	140	145	147
1916	124	134	160	188	185	138
1917	176	174	209	262	244	153
1918	196	205	230	339	339	178
1919	212	216	254	356	331	.....
1914.						
January	100	101	.....	100	.....	[1] 100
April	98	101	.....	100	.....	[1] 102
July	100	99	.....	101	.....	[1] 109
October	99	102	.....	107	.....	[1] 113
1915.						
January	99	103	.....	124	.....	[1] 127
April	100	108	.....	135	.....	[1] 153
July	101	111	.....	142	.....	[1] 167
October	101	112	.....	158	.....	[1] 142
1916.						
January	110	127	.....	179	.....	[1] 138
April	117	132	.....	190	.....	[1] 137
July	119	132	.....	186	.....	[1] 138
October	134	138	.....	198	.....	[1] 139
1917.						
January	151	154	.....	215	.....	[1] 140
April	172	169	.....	248	.....	[1] 146
July	186	179	.....	268	.....	[1] 158
October	181	179	.....	284	.....	[1] 166
1918.						
January	185	190	.....	313	.....	[1] 173
February	186	194	.....	319	.....	.....
March	187	199	.....	327	.....	.....
April	190	199	.....	333	.....	[1] 178
May	190	204	.....	335	.....	.....
June	193	207	.....	329	.....	.....
July	198	210	.....	337	.....	[1] 180
August	202	210	.....	350	.....	.....
September	207	211	.....	355	.....	.....
October	204	214	247	360	370	[1] 181
November	206	215	246	358	367	.....
December	206	213	258	353	372	.....
1919.						
January	203	211	248	348	369	[1] 177
February	197	206	249	340	358	.....
March	201	205	254	337	354	.....
April	203	206	252	332	339	.....
May	207	210	236	325	330	.....
June	207	210	238	330	324	.....
July	218	217	242	349	320	.....
August	226	222	257	347	321	.....
September	220	223	264	360	319	.....
October	223	221	274	382	307	.....
November	230	227	289	405	308	.....
December	238	238	297	423	317	.....
1920.						
January	248	250	306	487	319	.....
February	249	254	316	522	.....	.....
March	253	258	.....	554	.....	.....

[1] Quarter beginning in specified month.

Changes in Cost of Living in the United States.

THE following table shows the changes in the cost of living from December, 1917, to December, 1919, inclusive, for 13 industrial centers in the United States. The first column shows the average per cent of total expenditure that is devoted to the different groups of items—food, clothing, etc. The succeeding columns show for December, 1918 and 1919, the per cent of increase in the prices in the different groups of items over December, 1917. In a few instances, owing to incomplete data, these figures may be subject to slight changes.

CHANGES IN COST OF LIVING IN 13 INDUSTRIAL CITIES FROM DECEMBER, 1917, TO DECEMBER, 1919.

Item of expenditure.	*Atlanta, Ga.*			*Birmingham, Ala.*		
	Per cent of total expenditure.	Per cent of increase from December, 1917, to December—		Per cent of total expenditure.	Per cent of increase from December, 1917, to December—	
		1918	1919		1918	1919
Food	38.5	18.95	27.94	38.1	17.72	26.48
Clothing:						
Males	.....	43.32	88.04	.....	30.72	70.59
Females	.....	22.28	56.68	.....	19.26	49.18
All clothing	18.6	29.05	66.86	16.5	23.85	57.57
Housing	10.4	14.03	32.58	12.2	8.10	34.88
Fuel and light	5.6	17.00	30.81	4.6	22.84	39.78
Furniture and furnishings	5.6	24.88	49.87	5.3	19.43	45.13
Miscellaneous	21.4	14.84	31.70	23.3	13.83	26.84
Total	100.0	19.68	37.89	100.0	16.98	34.32
	Cincinnati, Ohio.			*Denver, Colo.*		
Food	40.6	15.32	22.94	38.3	20.01	26.02
Clothing:						
Males	.....	41.71	85.61	.....	46.38	87.24
Females	.....	28.78	82.78	.....	36.87	79.35
All clothing	15.2	33.80	84.20	16.2	40.12	82.07
Housing	14.4	.16	12.81	12.0	12.82	33.50
Fuel and light	4.1	9.99	11.00	5.7	8.14	19.62
Furniture and furnishings	5.2	25.72	51.14	5.5	22.59	46.34
Miscellaneous	20.3	20.38	40.28	22.4	14.82	32.26
Total	100.0	17.27	35.24	100.0	20.72	38.19
	Indianapolis, Ind.			*Kansas City, Mo.*		
Food	37.0	17.84	28.19	38.7	17.30	24.51
Clothing:						
Males	.....	38.38	75.30	.....	42.91	78.99
Females	.....	28.12	72.74	.....	39.08	94.28
All clothing	15.8	32.38	73.80	15.2	40.74	89.91
Housing	13.1	1.59	11.56	13.6	5.37	26.03
Fuel and light	5.9	19.75	27.28	5.7	18.01	27.53
Furniture and furnishings	5.9	18.87	48.37	4.9	31.14	61.79
Miscellaneous	22.2	21.86	38.15	21.8	15.56	31.45
Total	100.0	19.06	36.53	100.0	19.62	38.16

CHANGES IN COST OF LIVING IN 13 INDUSTRIAL CITIES FROM DECEMBER, 1917, TO DECEMBER, 1919—Concluded.

Item of expenditure.	Per cent of total expenditure.	Per cent of increase from December, 1917, to December—	
		1918	1919
Memphis, Tenn.			
Food	36.2	20.33	28.43
Clothing:			
Males	.....	32.91	64.62
Females	.....	25.18	66.90
All clothing	16.3	27.72	66.16
Housing	13.5	[1].03	23.14
Fuel and light	5.1	26.80	34.14
Furniture and furnishings	4.5	25.37	53.15
Miscellaneous	24.4	16.13	28.31
Total	100.0	18.33	35.23
Minneapolis, Minn.			
Food	35.4	17.71	34.10
Clothing:			
Males	.....	30.62	66.57
Females	.....	35.43	67.45
All clothing	15.5	33.49	66.98
Housing	16.8	[1].10	7.97
Fuel and light	6.8	14.71	22.42
Furniture and furnishings	4.8	18.08	45.57
Miscellaneous	20.5	12.27	25.43
Total	100.0	15.80	32.71
New Orleans, La.			
Food	42.6	16.56	21.13
Clothing:			
Males	.....	44.39	91.78
Females	.....	31.43	77.06
All clothing	15.0	36.75	83.16
Housing	12.0	[2]	10.79
Fuel and light	4.8	19.70	24.70
Furniture and furnishings	3.9	23.75	57.65
Miscellaneous	21.8	15.85	35.14
Total	100.0	17.90	33.86
Pittsburgh, Pa.			
Food	40.2	18.77	25.14
Clothing:			
Males	.....	41.30	84.10
Females	.....	33.00	82.40
All clothing	17.8	35.92	82.84
Housing	14.5	7.57	15.53
Fuel and light	3.2	9.17	9.83
Furniture and furnishings	5.4	26.26	63.06
Miscellaneous	18.9	16.25	28.25
Total	100.0	19.82	36.17
Richmond, Va.			
Food	41.6	20.54	23.12
Clothing:			
Males	.....	43.39	84.96
Females	.....	27.19	73.65
All clothing	15.9	33.80	78.57
Housing	10.5	1.00	9.83
Fuel and light	5.6	11.76	18.70
Furniture and furnishings	4.8	26.33	55.88
Miscellaneous	21.5	9.04	23.95
Total	100.0	17.88	32.02
St. Louis, Mo.			
Food	38.5	18.00	26.19
Clothing:			
Males	.....	29.94	64.63
Females	.....	34.93	89.66
All clothing	15.0	32.37	78.09
Housing	13.4	2.74	16.79
Fuel and light	4.9	4.84	8.23
Furniture and furnishings	5.6	21.77	52.91
Miscellaneous	22.6	14.48	30.28
Total	100.0	16.69	34.24
Scranton, Pa.			
Food	42.6	21.32	26.90
Clothing:			
Males	.....	36.99	69.10
Females	.....	32.61	86.81
All clothing	18.4	34.42	82.07
Housing	10.9	.51	2.42
Fuel and light	4.6	24.68	31.49
Furniture and furnishings	4.9	26.96	48.92
Miscellaneous	18.5	21.40	34.74
Total	100.0	21.89	37.10

[1] Decrease. [2] No change.

The next table shows the changes in the cost of living from December, 1914, to December, 1919, inclusive, for four localities on the Pacific coast. The table is constructed in the same manner as the preceding one.

CHANGES IN THE COST OF LIVING IN FOUR PACIFIC COAST LOCALITIES FROM DECEMBER, 1914, TO DECEMBER, 1919.

Los Angeles, Calif.

Item of expenditure.	Per cent of total expenditure.	Per cent of increase from December, 1914, to December—				
		1915	1916	1917	1918	1919
Food	35.8	[1] 4.12	0.41	33.41	61.83	71.04
Clothing:						
Males		1.65	10.33	41.85	104.59	151.54
Females		3.95	18.36	48.29	113.79	180.45
All clothing	14.9	2.78	14.28	45.02	109.12	167.63
Housing	13.4	[1] 2.68	[1] 2.54	[1] .64	4.43	26.76
Fuel and light	3.1	.36	2.34	10.40	18.26	35.28
Furniture and furnishings	5.1	6.28	23.09	56.43	118.49	175.49
Miscellaneous	27.7	[1] 1.93	7.68	28.85	52.03	76.87
Total	100.0	[1] 1.93	7.68	28.85	58.03	85.33

Portland, Oreg.

Food	34.3	[1] 3.81	9.75	42.17	70.64	81.56
Clothing:						
Males		3.44	16.75	44.30	90.54	148.57
Females		2.60	14.71	44.47	93.52	136.91
All clothing	16.1	3.03	15.75	44.38	96.59	142.14
Housing	12.8	[1] 10.91	[1] 19.55	[1] 22.16	12.28	27.73
Fuel and light	4.9	[1] .96	3.44	20.24	30.85	42.30
Furniture and furnishings	6.1	2.87	18.02	54.47	109.01	145.13
Miscellaneous	25.7	[1] 3.05	6.14	31.23	57.91	71.60
Total	100.0	[1] 3.05	6.14	31.23	64.24	83.73

San Francisco and Oakland, Calif.

Food	37.9	[1] 4.31	9.63	35.90	66.24	74.15
Clothing:						
Males		2.14	14.43	42.05	118.40	173.85
Females		2.77	14.53	45.07	99.55	163.17
All clothing	16.6	2.46	14.48	43.56	108.96	170.44
Housing	14.8	[1] .72	[1] 2.52	[1] 4.02	[1] 3.93	4.67
Fuel and light	4.1	[1] .14	4.57	14.35	30.10	41.25
Furniture and furnishings	4.2	5.96	21.71	48.21	103.42	143.76
Miscellaneous	22.4	[1] 1.66	8.30	28.63	50.52	74.69
Total	100.0	[1] 1.66	8.30	28.63	57.77	87.76

Seattle, Wash.

Food	33.5	[1] 2.75	8.46	38.65	72.53	80.91
Clothing:						
Males		.79	10.87	34.81	89.88	135.00
Females		1.55	11.72	37.93	86.21	162.98
All clothing	15.8	1.19	11.31	36.44	87.97	154.53
Housing	15.4	[1] 2.42	[1] 5.41	[1] .55	44.31	71.50
Fuel and light	5.4	[1] .19	2.93	23.85	51.78	63.82
Furniture and furnishings	5.1	8.52	27.43	52.29	141.52	201.03
Miscellaneous	24.7	[1] 1.02	7.40	31.08	58.49	86.81
Total	100.0	[1] 1.02	7.40	31.08	69.87	97.67

[1] Decrease.

Following are the index numbers showing the changes in the cost of living from the average for 1913 to December, 1919, inclusive. These numbers are based on the figures for 31 localities, part of which appear above and part of which were published in the May number of the MONTHLY LABOR REVIEW.

INDEX NUMBERS OF CHANGES IN COST OF LIVING, 1913, TO DECEMBER, 1919.

[Average, 1913=100.]

Month and year.	Index number.	Month and year.	Index number.
Average for 1913	100	December, 1916	118
		June, 1917	129
July, 1914	101	December, 1917	142
December, 1914	103	June, 1918	158
June, 1915	103	December, 1918	174
December, 1915	104	June, 1919	177
June, 1916	110	December, 1919	199

Retail Price Changes in Great Britain.

THE following table gives for Great Britain the increase over July, 1914, in the cost of food and general family expenditure for May of each year, 1915 to 1920, and for each month in 1920. The food items included in this report are: Ribs and thin flank of beef, both British and chilled or frozen; legs and breast of mutton, British and chilled or frozen; bacon; fish; flour; bread; tea; sugar; milk; butter, fresh and salt; cheese; margarine; eggs; and potatoes.

The table gives percentage of increase, and is not one of relative prices, as is the table given for the United States. When making comparisons this should be borne in mind, and to obtain the relative prices it is necessary to add 100 to the percentage as given, e. g., for January, 1920, the increase in cost of food is 136 per cent, the relative price being 236.

The figures represent two comparisons: First, the increase in prices, based on the same kinds and quantities as used in July, 1914; second, the increase, based on the change in the standard of living, resulting from a substitution of one kind of food for another to meet war-time conditions.

The table shows that retail prices of food were 146 per cent higher in May, 1920, than in July, 1914, and that the increased cost of all items in the family budget was 141 per cent.

PER CENT INCREASE IN COST OF FOOD AND ALL ITEMS IN FAMILY BUDGET IN GREAT BRITAIN BASED ON JULY, 1914.

[Compiled from the British Labor Gazette.]

Year and month.	Food.		All items in family budget.	
	Retail prices (assuming same kinds and quantities).	Expenditures (allowing for estimated changes in consumption).	Cost (assuming same kinds and quantities).	Expenditures (allowing for estimated changes in consumption).
May, 1915	26			
May, 1916	[1] 55			
May, 1917	98	65	[2] 70	
May, 1918	107	[3] 41	[3] 95–100	55–60
May, 1919	107	81	[4] 105	90
1920.				
January	136	115	125	115
February	135	112	130	115
March	133	107	130	115
April	135	([5])	130–135	([5])
May	146	([5])	141	([5])

[1] Including tax on sugar and tea.
[2] Not including taxes.
[3] Based on change in standard of food consumption adopted by the Ministry of Food.
[4] The increase, excluding additional taxation, is 7 per cent less.
[5] No longer calculable, mainly owing to decontrol.

Cost of Living in Argentina in 1913, 1917, and 1919.

FIGURES on the cost of living in Argentina are presented in Commerce Reports (Washington) for April 8, 1920, in an article which gives the following table of advances in prices of some of the staple foodstuffs, per kilo, since 1913. The conversions into United States money have been made on the basis of 1 paper peso equals 43 cents.

PRICES OF CERTAIN FOODSTUFFS PER KILO (2.2 POUNDS) IN ARGENTINA IN 1917 AND 1919 COMPARED WITH 1913.

Article.	1913	1917	1919	Article.	1913	1917	1919
Flour	$0.06½	$0.11	$0.15	Rice	$0.13	$0.17½	$0.34½
Potatoes	.03	.07	.11	Garbanzos (chick peas)	.....	.24	.30
Tea	1.29	2.00	2.45	Beef	.16	.17	.39
Bread	.08	.12½	.15	Cheese, common	.....	.47	.77½

The report states that firewood, which sold for $11.18 per metric ton in 1913, was $18.06 in 1919.

The following table gives prices taken from price lists of middle-class shops in Buenos Aires. They are said to be prevailing prices encountered by the average careful shopper:

AVERAGE RETAIL PRICES IN MIDDLE-CLASS SHOPS IN BUENOS AIRES.

Article.	Unit.	Price.	Article.	Unit.	Price.
Vegetables:			Clothing, men's:		
Beans	Pound	$0.10	Suits, good	Each	$80.00
Peas	do	.10	Suits, ordinary	do	60.00
Corn, green	Dozen	.40	Suits, very common	do	35.00
Spanish beans	Pound	.14	Shirts, ordinary	do	3.80
Rice	do	.18	Shirts, very ordinary	do	2.60
Tomatoes (in season)	do	.41	Socks, ordinary	Pair	.80
Meats and fish:			Shoes, ordinary	do	13.00
Beef	do	.17	Shoes, cheap work	do	7.30
Pork	do	.23	Linen collars	Each	.38
Lamb	do	.17	Miscellaneous:		
Sardines, French	Can	.60	Cheese, common	Pound	.35
Sardines, Norwegian	do	.33	Soap, common yellow	do	.30
Fresh fish	Pound	.17	Soap, cheapest toilet	Bar	.09
Canned salmon	Can	.26	Firewood	Ton	14.00
Fruits:			Oil, heating	Gallon	.70
Apples (North American, best grade)	Dozen	2.20	Tea, ordinary	Pound	1.12
Apples (local, for cooking only)	do	.70	Coffee, cheapest	do	.44
Prunes, dried	Pound	.70	Jams, domestic	Small jar	.70 to 1.32
Peaches, dried	do	.70	Calico (enough for one common house dress)		1.30 to 3.45
Peaches (in season, medium)	Dozen	.65			
Oranges, fair	do	.86			
Bananas, very poor	do	.26			

With respect to rents the report makes the following comment:

With land values as high as $85 (United States currency) per square foot in the central parts of Buenos Aires and single-story houses the prevailing type, rents are necessarily high. A five-room flat, exclusive of kitchen, suitable for the average mechanic, rents for $60 per month, or actually more than his month's wages. Consequently several large families often occupy a single house, and even so there are cases of eviction because of inability to pay rent.

It is the custom to place the address of a house to be rented with a rent agent, who charges a fee of 10 pesos [$4.30] to the prospective tenant before he gives the address of the vacant apartment. This means that a person looking for a flat often spends 50 or 60 pesos [$21.50 to $25.80] for information before suitable accommodations are found. The rents for four or five room apartments of the better class, usually without lighting fixtures or plumbing attachments, vary from $125 to $160 per month. These accommodations are considered suitable for what corresponds to the middle class in the United States.

The daily wages of workmen vary from 3 to 7 paper pesos ($1.29 to $3.01, par), according to the report. Gardeners and common laborers receive 3 to 4 pesos ($1.29 to $1.72, par) per day, carpenters and other mechanics usually 6 to 7 paper pesos ($2.58 to $3.01, par) per day, railway laborers 60 to 80 pesos ($25.80 to $34.30, par) per month, and street-car motormen and conductors in Buenos Aires recently established a minimum rate of 4.50 pesos ($1.93½, par) per day. The report suggests that "at the present high price of food and rent the average laborer finds his wages unequal to the task of providing the necessities for his family."

WAGES AND HOURS OF LABOR.

Wages and Hours in Automobile, Car, Electrical Apparatus, Foundry, Machinery, Machine Tool, and Typewriter Industries.

IN THE following tables is presented a summary report on the industries included in the Industrial Survey of 1919 not covered by reports appearing in earlier numbers of the Monthly Labor Review. The industries included in this report are as follows: The manufacture of automobiles, cars, electrical apparatus, the foundry industry, the manufacture of machinery, machine tools, and typewriters. These industries have a common feature in the fact that they are all engaged in working up iron and steel into the form of finished products.

The limitations put upon the survey in the different industries are as follows: The automobile industry includes the manufacture of both pleasure cars and commercial cars. Of the 32 establishments covered in the investigation of the automobile industry, 13 manufactured only pleasure cars, 14 only commercial cars, while 5 manufactured both pleasure and commercial cars.

The investigation of the car industry was confined to establishments manufacturing freight cars on a commercial basis.

Under the heading electrical apparatus is included information concerning the manufacture of such electrical machinery as generators, motors, and transformers and such apparatus and supplies as telephone equipment, circuit breakers, rheostats, and wiring devices.

The foundries from which data were obtained were for the most part connected with establishments using their own castings. Automobiles were the final product of 1 of these establishments, electrical apparatus of 2, typewriters of 2, machine tools of 5, cars of 6, and machinery of 134.

Two classes of machine-shop establishments were included in the survey, those engaged in the manufacture of machine tools and those engaged in the manufacture of other forms of machinery. All establishments of the latter class are grouped under the heading "Machinery." The machines turned out by these establishments were such heavy products as stationary engines, mining machinery, ice-making machines, printing presses, sugar-mill machinery, and textile machinery. The machine-tool industry is so clearly defined that no explanation of the scope of the investigation is necessary.

For lack of a general term to describe the variety of products included under the heading "Typewriters," the name of the most important single one of those products has been applied to the group as a whole. In addition to the manufacture of typewriters is included the manufacture of adding machines, computing machines, and cash registers.

Table 1 shows the States included in the survey of the several industries covered by this article and the number of establishments and employees listed in each State.

TABLE 1.—NUMBER OF ESTABLISHMENTS AND NUMBER OF EMPLOYEES, BY INDUSTRY AND STATE.

State.	Automobile.		Car.		Electrical machinery.		Foundry.		Machinery.		Machine tool.		Typewriter.	
	Establishm'ts.	Employees.	Establishm'ts.	Employees.	Establishm'ts.	Employees.	Establishm'ts.	Employees.	Establishm'ts.	Employees.	Establishm'ts.	Employees.	Establishm'ts.	Employees.
Alabama							2	158	2	113				
California							6	506	7	619				
Colorado							3	197	3	216				
Connecticut					4	575	8	524	3	346	3	1,134	3	1,782
Delaware							2	158	2	168				
Georgia							3	132	3	76				
Illinois	3	586	4	3,714	4	946	10	1,068	10	1,383	3	691	4	1,831
Indiana	3	1,354	3	2,012	3	249	5	655	6	764	2	267	1	360
Iowa			1	406			7	1,171	5	306				
Kentucky							6	226	6	255				
Maine							2	285	2	622				
Maryland			1	231			2	86	2	71				
Massachusetts			1	319	5	1,941	3	854	3	625	3	644		
Michigan	9	6,697					5	731	5	258	2	235	2	2,420
Minnesota							2	383	3	847				
Missouri			2	1,708			9	994	9	647			2	259
New Hampshire							4	106	1	141				
New Jersey			1	222	3	316	6	750	5	376	4	595	2	388
New York	4	1,687	1	401	8	853	21	1,399	12	1,628	3	844	4	2,087
Ohio	5	4,986	1	471	6	405	10	1,470	4	479	3	1,252	2	1,800
Oregon							4	257	4	347				
Pennsylvania	3	881	4	3,622	5	701	10	1,852	7	2,006	2	445	5	972
Rhode Island							5	272	3	361	3	1,400		
Tennessee			2	1,157			1	140						
Vermont							2	32	1	70				
Washington							5	272	5	305				
West Virginia			1	422			3	434	2	241				
Wisconsin	5	2,259					4	318	6	689	1	328	3	419
Total	32	18,450	22	14,685	38	5,986	150	15,430	121	13,960	29	7,835	28	12,378

The speed with which it was necessary to carry out the survey made it impossible to obtain the records of all the establishments in an industry for the same pay roll period. As conditions were changing rapidly during the progress of the survey, the exact date of the material presented is of more importance than it would be in a normal year. The pay rolls in each industry were distributed by months, as shown in the following table:

TABLE 2.—NUMBER OF PAY-ROLL PERIODS IN SPECIFIED MONTHS.

Industry.	Total number of pay-roll periods.	Number of pay-roll periods in—								
		1918				1919				
		Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.
Automobile	32					12	9	5	6	
Car	22						11	5	3	3
Electrical apparatus	38			1		5	8	15	7	2
Foundry	150		5	2	8	28	31	32	33	11
Machinery	121		1	2	7	26	23	28	25	9
Machine tool	29	3	22	4						
Typewriter	28					12	5	3	5	3

It will be seen that all the establishments included in the machine-tool industry fell in the months of September, October, and November, 1918, while the other industries were wholly, or in large part, confined to the early months of 1919. In the electrical-apparatus industry 1 schedule out of 38 fell in 1918; in the foundry industry, 15 out of 150; in the machinery industry, 10 out of 121. At the other extreme a comparatively small number of establishments fell as late as May, 1919, viz, 3 in the car industry, 2 in the electrical-apparatus industry, 11 in the foundry industry, 9 in the machinery industry, 3 in the typewriter industry. The material is presented as of the year 1919. So far as could be ascertained, no changes in rates of pay occurred in any of the industries during the progress of the survey.

Every effort was made to confine the survey to establishments working full time during the selected pay-roll period. In a few cases, however, it was found to be impossible to secure adequate representation of different localities without including one or more establishments working only part time. As part-time work necessarily results in abnormally low figures for hours worked and earnings received during the pay-roll period, the number of such establishments is hereby indicated. In the manufacture of electrical apparatus 1 part-time establishment was included in Massachusetts. In the foundry industry 12 were included, distributed as follows: 1 in Delaware, 1 in Iowa, 1 in Maine, 1 in Massachusetts, 2 in New Hampshire, 3 in New York, 1 in Pennsylvania, 1 in Rhode Island, and 1 in Vermont. In the machinery industry 1 part-time pay roll was included in each of the following States: Indiana, Iowa, Maryland, New Hampshire, and New York. In the typewriter industry 2 part-time pay rolls, both for establishments located in Pennsylvania, were included. In comparing hours and earnings of employees in these industries, due weight should be given to the effect of the part-time pay rolls upon the averages for the States and industries in which they were found.

The information concerning hours and earnings on which the tables are based was obtained directly from the pay rolls or other records of the companies by agents of the Bureau. Other information was obtained from responsible officials in personal interviews. Wherever the records of the company failed to indicate the time actually worked by pieceworkers during the selected pay-roll period, arrangements were made to have such a record kept for a future period. In all cases the figures copied by the agents represented the hours actually worked and earnings actually received.

As the material comes in to the office the figures for hours and those for earnings are both in incommensurable form on account of inequalities in the length of pay-roll periods and in the time worked by different individual employees. Before they can be presented in tabular form it is necessary to reduce both hours and earnings to a common denominator. The comparable figures selected for use in the following tables are hours worked per day and earnings per hour. These figures are obtained in the following manner:

The hours per day of each employee are obtained by dividing the number of hours worked by him during the pay-roll period by the number of week days, holidays omitted, in the pay-roll period. Thus in the case of pay rolls for a single week containing no holidays, the hours worked by each employee during the pay-roll period are divided

by six, whether the employee worked on each of the six days or not. Similarly the hours actually worked by an employee in any establishment during a pay-roll period containing 13 workdays were divided by 13, regardless of the number of days on which the employee worked. The resulting figure represents the number of hours per day that the employee would have worked if his time had been distributed uniformly among the week days of the pay-roll period.

The earnings of each employee are reduced to the form of average earnings per hour by dividing his total earnings for the pay-roll period by the total hours worked by him during the pay-roll period. The resulting figure indicates how much he would have earned per hour if his earnings had been distributed uniformly over all the hours actually worked by him during the period. The sum of these individual hourly earnings, divided by the number of employees in the group, equals the average hourly earnings for the group.

All one-week pay rolls included in the survey of these industries were six-day pay rolls. The half monthly and monthly periods, however, showed considerable differences in length. The following table shows for each industry the number of schedules covering each specified number of workdays.

TABLE 3.—SCHEDULE DISTRIBUTION BY NUMBER OF WORK DAYS IN THE PAY-ROLL PERIOD.

Industry.	Total number of schedules.	One week or 6 work days.	Two weeks, one-half month, or—					One month, or—		
			10 work days.	11 work days.	12 work days.	13 work days.	14 work days.	22 work days.	24 work days.	27 work days.
Automobile	32	20	.....	4	3	3	2	.....	.....	.....
Car	22	6	6	1	1	8	.....	.....	.....	.....
Electrical apparatus	38	29	.....	1	3	1	1	1	2	.....
Foundry	150	118	.....	2	7	15	6	.....	1	1
Machinery	121	87	.....	2	8	15	8	.....	.....	1
Machine tool	29	17	.....	.....	1	4	3	2	2	.....
Typewriter	28	20	.....	.....	2	2	4	.....	.....	.....

The significance of the figures in the different columns of Table 4, which follows, the method by which they were obtained and the limitations under which they should be used have been explained in detail in previous articles in the MONTHLY LABOR REVIEW dealing with the results of the survey.[1] The various figures in the present article have been computed by the same method as those in the earlier articles.

In a considerable number of instances in Table 4 employees in more than one occupation have been grouped together. This has been done largely on account of the limitations of space necessarily imposed upon an article of this kind. It has usually been done, however, only in cases where both the average hours and earnings and the distribution of employees by hours and earnings have been so nearly alike that the resulting figures could be used with equal confidence as showing the conditions in any one of the separate occupations.

[1] See especially MONTHLY LABOR REVIEW for January, 1920, pp. 120 to 124, and May 1920, pp. 96–100.

An exception should be noted in the case of employees working directly upon metal-working machinery. These employees are variously known as machinists, machine hands, and machine operators. In a general way, these terms indicate varying degrees of knowledge and skill possessed by the employees properly grouped under them. In practice, however, such lack of uniformity in the use of terms was found to prevail not only as between different metal-working industries, but even as between different establishments of the same industry, that the attempt to maintain this distinction in its entirety was found to be impracticable. It was usually possible to identify in any establishment a number of employees who deserved the title of skilled, all-around machinists. These employees have been brought together under that general occupation term. For employees of a less degree of skill, however, it was impossible to maintain any distinction based either on knowledge or on skill, which could be relied upon to give comparable figures between different parts of the country in the same industry and still more between different industries in which machine workers were employed. The only recourse was to throw machine workers who could not be indentified as skilled machinists into one group. To that group has been given the general title Operators. As it includes people of varying degrees of skill and performing work requiring varying amounts of responsibility, the averages as given in the table are based upon returns embodying what must be recognized as an undesirably wide range of individual differences. They represent the average hours and earnings of all employees working at the specified metal-working machinery, except those who could be identified as machinists.

TABLE 4.—AVERAGE HOURS AND EARNINGS IN THE AUTOMOBILE, CAR, ELECTRICAL APPARATUS, FOUNDRY, MACHINERY, MACHINE TOOL, AND TYPEWRITER INDUSTRIES, BY SEX AND OCCUPATION.

Automobile.

Occupation.	Number of establishments.	Number of employees.	Average actual hours worked during one pay period.					Average full-time hours per week.	Per cent of full time worked.	Average actual earnings made during one pay period.				
			Weekly pay periods.	Biweekly and semi-monthly pay periods.	Monthly pay periods.	Per week day.	Per week.			Weekly pay periods.	Biweekly and semi-monthly pay periods.	Monthly pay periods.	Per hour.	Per week.
MALES.														
Assemblers	31	4,573	46.9	100.7	.....	8.0	48.0	50.8	94.5	$23.83	$59.96	.....	$0.545	$26.32
Bench hands, machine shop	24	801	46.8	105.0	.....	8.3	49.8	50.6	98.4	23.01	60.08	.....	.542	25.74
Blacksmiths	28	123	51.6	103.4	.....	8.5	51.0	50.9	100.2	29.06	60.39	.....	.575	29.47
Blacksmiths' helpers	23	100	51.4	102.4	.....	8.4	50.4	50.5	99.8	22.50	48.92	.....	.460	23.36
Boring-mill operators	20	160	49.5	104.4	.....	8.5	51.0	50.4	101.2	29.66	60.39	.....	.648	32.59
Chippers, grinders, sand blasters, tumblers, and cleaners	21	377	48.9	95.6	.....	8.0	48.0	49.2	97.6	22.02	52.54	.....	.510	25.47
Cushion makers	14	85	45.0	108.8	.....	7.9	47.4	49.6	95.6	30.39	74.96	.....	.672	32.61
Cutters, cloth and leather	15	68	47.7	100.1	.....	8.0	48.0	50.1	95.8	25.37	76.98	.....	.667	31.72
Drill-press operators	32	1,632	47.2	98.4	.....	8.1	48.6	50.7	95.9	23.71	57.35	.....	.541	26.33
Gear cutters	12	115	52.2	103.3	.....	8.7	52.2	52.3	99.8	28.42	61.11	.....	.575	29.75
Grinding-machine operators	26	911	47.8	101.8	.....	8.1	48.6	50.7	95.9	28.69	62.30	.....	.600	29.80
Hardeners and furnace tenders	14	126	55.1	87.2	.....	9.1	54.6	51.5	106.0	26.50	59.68	.....	.533	29.27
Laborers	29	802	47.8	98.5	.....	8.1	48.6	50.7	95.9	20.87	48.54	.....	.460	22.16
Lathe operators	29	1,482	49.7	101.4	.....	8.3	49.8	50.9	97.8	27.92	62.86	.....	.594	29.49
Machinists and machine repairers	18	292	50.8	103.1	.....	8.5	51.0	48.8	104.5	32.86	69.36	.....	.655	33.33
Milling-machine operators	30	770	48.6	101.4	.....	8.2	49.2	51.1	96.3	25.17	59.15	.....	.549	27.31
Packers and furnace helpers	10	129	52.1	99.7	.....	8.7	52.2	49.7	105.0	23.43	54.53	.....	.483	25.22
Painters and varnishers, including letterers, monogram men, and stripers	27	360	48.7	106.5	.....	8.4	50.4	51.1	98.6	32.94	80.55	.....	.707	36.00
Painters, rough, including dippers, sanders, and rough-brush hands	29	684	48.3	106.4	.....	8.2	49.2	50.4	97.6	25.14	62.25	.....	.551	27.22
Paint sprayers	8	59	50.3	98.9	.....	8.2	49.2	51.2	96.1	37.07	62.22	.....	.678	33.56
Planer and shaper operators	16	68	47.1	109.2	.....	8.5	51.0	51.5	99.0	24.27	64.91	.....	.557	29.57
Punch-press operators	18	200	45.6	107.5	.....	8.4	50.4	51.6	97.7	21.43	57.20	.....	.511	26.50
Rubbers, rough stuff and varnish	18	319	46.2	110.3	.....	8.1	48.6	49.9	97.4	30.85	87.40	.....	.720	35.36
Screw-machine operators	25	705	48.6	101.5	.....	8.3	49.8	50.3	99.0	26.71	59.39	.....	.568	34.32
Setters, machine	16	118	54.7	100.6	.....	8.9	53.4	49.9	107.0	32.11	69.33	.....	.637	34.99
Sheet-metal workers	26	705	46.2	107.7	.....	8.3	49.8	51.1	97.5	24.93	64.39	.....	.565	28.55
Testers and adjusters	31	980	48.4	100.8	.....	8.1	48.6	50.8	92.1	23.03	52.45	.....	.496	24.25
Toolmakers, die makers, and diesinkers	27	568	49.9	107.5	.....	8.7	52.2	50.1	104.2	37.32	80.79	.....	.748	38.31
Top builders and back hangers	23	515	44.1	102.1	.....	7.7	46.2	50.1	92.2	30.98	80.13	.....	.741	34.27
Total	32	17,827	47.8	101.7	.....	8.2	49.2	50.6	97.2	25.87	61.37	.....	.569	28.22

TABLE 4.—AVERAGE HOURS AND EARNINGS IN THE AUTOMOBILE, CAR, ELECTRICAL APPARATUS, FOUNDRY, MACHINERY, MACHINE TOOL, AND TYPEWRITER INDUSTRIES, BY SEX AND OCCUPATION—Continued.

Automobile—Concluded.

Occupation.	Number of establishments.	Number of employees.	Average actual hours worked during one pay period.					Average full-time hours per week.	Per cent of full time worked.	Average actual earnings made during one pay period.				
			Weekly pay periods.	Biweekly and semi-monthly pay periods.	Monthly pay periods.	Per week day.	Per week.			Weekly pay periods.	Biweekly and semi-monthly pay periods.	Monthly pay periods.	Per hour.	Per week.
FEMALES.														
Assemblers	7	64	45.1	93.7	.....	7.6	45.6	49.2	92.7	$16.32	$36.82	.....	$0.382	$17.34
Bench hands, machine shop	3	23	.....	99.3	.....	8.2	49.2	50.7	97.0	.....	42.10	.....	.428	19.61
Bench hands, trim shop	7	82	47.8	102.9	.....	8.0	48.0	50.2	95.6	19.11	37.84	.....	.377	18.47
Drill-press operators	9	115	46.8	86.8	.....	7.3	43.8	48.6	90.1	16.20	35.76	.....	.388	16.97
Gear cutters	2	12	.....	90.7	.....	8.0	48.0	46.7	102.8	.....	42.72	.....	.471	24.16
Grinding-machine operators	5	23	44.0	93.4	.....	7.8	46.8	48.0	97.5	13.21	37.17	.....	.378	18.09
Lathe operators	4	33	44.8	93.5	.....	7.6	45.6	49.1	92.9	17.25	35.41	.....	.382	16.76
Milling-machine operators	6	30	48.0	91.1	.....	7.8	46.8	50.2	93.2	16.31	35.68	.....	.353	16.34
Screw-machine operators	5	18	42.8	95.5	.....	7.8	46.8	48.4	96.7	16.68	41.12	.....	.414	19.76
Sewing-machine operators	16	223	46.4	101.8	.....	7.9	47.4	49.6	95.6	17.32	36.95	.....	.370	17.77
Total	21	623	46.3	96.8	.....	7.8	46.8	49.3	94.9	16.98	37.31	.....	.380	17.81
Car.														
MALES.														
Air brakemen	21	227	50.0	96.4	.....	8.6	51.6	54.1	95.4	$33.29	$73.56	.....	$0.753	$32.39
Axle turners	21	220	53.2	90.5	.....	8.0	48.0	53.6	89.6	39.99	68.78	.....	.754	30.74
Body builders, wood	18	1,869	46.6	97.4	.....	8.0	48.0	54.0	88.9	26.55	72.62	.....	.714	30.20
Bulldozers	21	103	47.6	103.6	.....	8.6	51.6	54.1	95.4	31.84	80.00	.....	.748	36.38
Bull-riveter operators	21	237	44.5	95.6	.....	8.4	50.4	54.3	92.8	32.41	87.42	.....	.891	39.60
Crane operators	17	281	42.2	106.7	.....	9.0	54.0	52.9	102.1	22.69	56.03	.....	.527	24.26
Drill-press operators	22	217	47.8	96.8	.....	8.1	48.6	52.1	93.3	26.27	64.84	.....	.665	29.09
Fitters and reamers, steel	22	2,270	44.4	91.8	.....	8.0	48.0	53.9	89.1	29.39	71.90	.....	.770	31.03
Forging-machine operators	21	183	48.1	99.6	.....	8.4	50.4	53.4	94.4	29.20	74.96	.....	.740	35.28
Hammersmiths, Bradley, drop and steam	20	167	51.8	93.3	.....	8.0	48.0	51.8	92.7	32.64	81.19	.....	.867	36.74
Handy men	21	990	43.0	96.1	.....	8.1	48.6	53.6	90.7	20.70	45.49	.....	.477	20.15
Helpers and heaters	22	1,637	45.2	94.7	.....	8.2	49.2	53.7	91.6	24.65	64.01	.....	.655	27.86
Holders-on and buckers-up	21	589	44.2	89.7	.....	7.8	46.8	53.5	87.5	31.49	82.30	.....	.885	35.08

Hydraulic-press operators	15	93	54.4	93.1	.....	8.7	52.2	53.9	96.8	39.03	80.25	.....	.830	37.61
Laborers	22	1,791	49.9	91.0	.....	7.7	46.2	54.1	85.4	19.21	35.95	.....	.393	16.87
Markers	17	96	47.3	98.9	.....	8.5	51.0	53.5	95.3	30.18	77.15	.....	.773	34.82
Painters and paint sprayers	22	863	46.7	90.5	.....	7.7	46.2	53.4	86.5	30.78	62.81	.....	.684	28.25
Punch-press operators	22	520	47.7	98.0	.....	8.4	50.4	53.9	93.5	30.90	76.65	.....	.757	33.68
Riveters, pneumatic	22	765	46.3	91.9	.....	8.1	48.6	53.5	90.8	32.00	87.82	.....	.914	37.27
Rivet heaters and rivet stickers	21	651	44.6	90.5	.....	7.7	46.2	54.4	84.9	25.60	61.08	.....	.665	27.46
Shear operators	21	192	47.7	99.9	.....	8.5	51.0	53.0	96.2	32.53	76.46	.....	.763	34.24
Truck builders	22	194	46.8	94.4	.....	8.5	51.0	54.8	93.1	27.75	72.78	.....	.749	31.15
Welders, oxyacetylene	20	63	39.7	94.6	.....	8.1	48.6	54.0	90.0	25.00	64.00	.....	.671	26.48
Wheel borers	21	50	42.7	98.6	.....	8.3	49.8	53.2	93.6	25.83	67.16	.....	.687	26.91
Wheel pressers	21	47	51.2	102.5	.....	9.0	54.0	53.3	101.3	31.66	74.83	.....	.719	30.22
Woodworking-machine operators	19	370	46.4	103.8	.....	8.5	51.0	53.6	95.1	26.54	59.09	.....	.573	26.49
Total	22	14,685	46.4	94.2	.....	8.1	48.6	53.8	90.3	26.79	65.19	.....	.676	27.98

Electrical apparatus.

MALES.														
Armature winders	15	106	49.2	101.9	219.5	8.4	50.4	50.6	99.6	$27.28	$61.30	$119.62	$0.568	$28.60
Assemblers	35	1,191	47.1	105.1	174.1	7.8	46.8	50.7	92.3	23.62	48.76	83.11	.501	23.32
Boring-mill operators	9	37	46.4	103.8	252.6	8.3	49.8	50.7	98.2	31.94	75.07	172.02	.704	34.71
Coil winders	18	156	45.7	99.6	172.9	7.6	45.6	50.3	90.7	30.62	48.99	104.03	.629	28.77
Connectors and insulators	13	46	43.5	107.9	205.7	7.7	46.2	50.9	90.8	16.94	58.10	73.44	.404	18.46
Drill-press operators	30	296	46.9	103.8	189.4	8.0	48.0	51.1	94.0	23.06	38.77	109.03	.491	22.81
Fitters	14	84	48.1	108.4	.....	8.1	48.6	51.1	95.1	25.02	58.19	.....	.522	25.37
Grinders	18	76	46.1	122.8	203.3	7.8	46.8	50.3	93.0	27.30	64.41	105.29	.589	27.00
Handy men	31	250	46.9	117.2	160.9	7.8	46.8	50.1	93.4	22.99	47.53	79.99	.473	22.11
Inspectors and testers	26	294	48.3	111.5	219.5	8.1	48.6	50.2	96.8	24.87	54.60	88.93	.501	24.42
Laborers	21	224	46.4	104.6	207.9	8.0	48.0	50.3	95.4	18.96	42.34	66.73	.396	19.06
Lathe operators	28	346	47.1	105.8	208.0	8.1	48.6	51.3	91.2	28.07	54.99	119.97	.577	27.76
Machine operators	4	63	48.3	.....	.....	8.0	48.3	50.2	96.2	26.63	.....	.....	.556	26.63
Machine setters	15	58	47.8	112.4	.....	8.0	48.0	50.4	95.2	27.78	52.33	.....	.576	27.61
Machinists	23	140	47.7	109.5	225.7	8.1	48.6	50.0	97.2	30.42	67.11	151.57	.638	30.77
Metal finishers	18	66	47.5	102.9	213.2	8.0	48.0	50.3	95.4	26.20	32.18	112.85	.512	24.30
Milling-machine operators	23	102	48.3	107.6	206.7	8.2	49.2	50.5	97.4	23.94	56.36	109.59	.504	24.60
Planer and shaper operators	11	25	44.9	108.4	208.7	8.0	48.0	50.9	94.3	24.74	71.27	98.43	.563	26.90
Polishers and buffers	16	62	50.0	.....	209.0	8.3	49.8	51.7	96.3	25.94	.....	79.92	.518	25.58
Punch-press operators	26	190	46.7	110.3	205.6	7.9	47.4	50.9	93.1	24.93	41.53	79.47	.513	23.74
Screw-machine operators	22	218	47.5	122.6	217.2	8.4	50.4	50.9	99.0	25.41	41.08	76.18	.522	24.64
Sheet-metal workers	5	20	50.7	102.9	.....	8.5	51.0	50.4	101.2	26.27	85.64	.....	.566	28.75
Toolmakers	31	240	48.4	99.1	207.2	8.1	48.6	50.7	95.9	36.03	62.40	150.12	.736	35.53
Welders	5	37	41.0	.....	163.3	6.8	40.8	49.4	82.6	30.16	.....	142.48	.770	31.67
Wiremen	7	41	46.8	.....	.....	7.8	46.8	49.5	94.5	23.42	.....	.....	.501	23.42
Total	38	4,368	47.3	106.6	187.2	8.0	48.0	50.6	94.9	25.53	50.84	96.09	.532	25.09

TABLE 4.—AVERAGE HOURS AND EARNINGS IN THE AUTOMOBILE, CAR, ELECTRICAL APPARATUS, FOUNDRY, MACHINERY, MACHINE TOOL, AND TYPEWRITER INDUSTRIES, BY SEX AND OCCUPATION—Continued.

Electrical apparatus—Concluded.

Occupation.	Number of establishments.	Number of employees.	Average actual hours worked during one pay period.					Average full-time hours per week.	Per cent of full time worked.	Average actual earnings made during one pay period.				
			Weekly pay periods.	Biweekly and semi-monthly pay periods.	Monthly pay periods.	Per week day.	Per week.			Weekly pay periods.	Biweekly and semi-monthly pay periods.	Monthly pay periods.	Per hour.	Per week.
FEMALES.														
Armature winders	5	129	42.9	.....	.....	7.2	42.9	50.1	85.6	$19.06	.....	.....	$0.450	$19.06
Assemblers	22	708	46.8	108.5	199.2	7.8	46.8	50.6	92.5	14.33	$27.58	$53.41	.294	13.71
Coil winders	22	232	43.6	103.7	184.2	7.5	45.0	49.8	90.4	15.27	23.63	69.50	.337	15.03
Connectors and insulators	17	157	44.7	75.8	175.9	7.6	45.6	49.5	92.1	15.21	21.21	50.68	.335	14.66
Drill-press operators	13	106	46.3	96.3	193.3	7.7	46.2	50.1	92.2	15.62	19.25	62.73	.334	15.19
Inspectors and testers	12	147	45.8	112.9	202.8	7.7	46.2	50.2	92.0	14.60	24.80	49.07	.279	12.90
Lathe operators	3	47	39.0	109.5	204.9	7.8	46.8	50.7	92.3	9.74	20.04	57.10	.276	12.64
Metal finishers	6	13	48.0	85.7	214.0	7.6	45.6	52.0	87.7	16.22	19.25	65.75	.319	14.30
Milling-machine operators	2	5	45.1	.....	.....	7.5	45.1	49.2	91.7	18.26	.....	.....	.406	18.26
Punch-press operators	11	66	45.0	99.0	201.2	7.5	45.0	49.9	90.2	16.46	29.70	68.97	.378	16.57
Screw-machine operators	5	8	39.0	88.9	.....	6.7	40.2	49.5	81.2	10.10	28.02	.....	.289	11.52
Total	30	1,618	45.4	104.2	198.6	7.7	46.2	50.2	92.0	15.30	25.71	54.69	.322	14.53

Foundry.

MALES.														
Chippers and grinders	123	1,719	48.6	104.7	207.24	8.3	49.8	54.3	91.7	$26.29	$52.62	$101.84	$0.487	$24.50
Core makers, first class	141	1,136	47.4	105.5	178.72	7.9	47.4	51.8	91.5	30.39	73.38	125.74	.670	31.36
Core makers, second class	47	295	49.7	102.4	187.75	8.2	49.2	55.4	88.8	26.63	56.27	96.01	.539	26.52
Cranemen	76	374	55.9	123.3	199.82	9.5	57.0	57.0	100.0	29.15	68.17	111.14	.534	30.46
Cupola tenders	139	278	53.7	119.1	212.99	9.0	54.0	53.7	100.6	27.34	62.96	138.17	.517	27.86
Handy men	61	491	49.7	123.3	211.39	8.8	52.8	56.3	93.8	25.10	61.89	112.31	.512	26.84
Laborers	144	5,031	49.8	107.8	175.71	8.4	50.4	54.7	92.1	21.61	49.64	82.06	.440	22.22
Molders, bench	101	844	45.2	93.1	150.00	7.6	45.6	51.5	88.5	28.11	56.99	87.90	.618	28.06
Molders, floor	146	2,583	47.4	99.1	185.70	7.9	47.4	51.5	92.0	32.29	73.93	133.35	.700	32.86
Molders, floor, specialist	17	175	46.6	94.1	199.55	8.0	48.0	51.6	93.0	30.49	41.35	129.21	.600	27.68
Molders, machine	60	805	48.5	111.6	.....	8.3	49.8	55.0	90.5	29.22	67.37	.....	.596	29.70

Molders' helpers, floor	54	707	47.9	93.4	199.81	7.8	46.8	51.3	91.2	23.36	42.36	100.02	.481	22.29
Pattern makers	107	593	47.6	103.7	191.76	8.0	48.0	51.1	93.9	33.05	78.77	158.88	.729	34.73
Rough carpenters' and pattern makers' helpers	103	316	49.0	105.3	186.02	8.2	49.2	52.4	93.9	25.91	55.50	118.65	.525	26.08
Total	150	15,347	49.3	105.6	188.9	8.2	49.2	53.8	91.4	26.28	59.11	110.34	.549	26.82
FEMALES.														
Core makers, second class	13	83	43.5	81.7	.....	7.1	42.6	50.4	84.5	12.66	34.61	.....	.333	14.22

Machinery.

MALES.													
Assemblers	35	451	48.7	111.3	.....	8.1	48.6	51.1	95.1	$25.85	$82.23	.....	$0.638	$31.07
Blacksmiths	95	278	47.2	105.7	223.6	8.0	48.0	51.3	93.6	32.23	65.69	$192.61	.669	31.91
Blacksmiths' helpers	85	336	49.4	104.6	217.1	7.9	47.4	50.9	93.1	24.00	48.79	98.03	.494	23.57
Boring-mill operators	66	379	50.3	107.8	226.2	8.4	50.4	51.7	97.5	30.27	70.23	203.75	.650	32.81
Chippers	16	78	45.4	102.4	245.0	8.1	48.6	51.5	94.4	19.69	51.43	122.75	.471	23.47
Cranemen	52	197	51.8	116.8	236.1	9.0	54.0	51.9	104.0	27.68	58.81	136.62	.517	33.81
Drill-press operators	94	905	48.3	106.8	215.3	8.1	48.6	51.6	94.2	24.06	57.39	123.04	.510	24.93
Engine-lathe operators	81	1,398	49.7	104.4	218.5	8.2	49.2	52.0	94.6	27.81	64.53	155.92	.589	28.88
Fitters, first class	73	1,463	49.4	109.5	220.6	8.3	49.8	51.4	96.9	31.32	69.89	127.64	.630	31.20
Fitters, second class	53	561	48.8	111.8	215.7	8.2	49.2	52.9	93.0	21.85	55.96	110.50	.498	24.41
Gear cutters	27	91	49.7	114.1	244.5	8.4	50.4	52.3	96.4	25.98	67.73	161.18	.549	28.12
Grinders	45	275	49.6	111.0	221.1	8.2	49.2	52.2	94.3	24.59	59.09	145.05	.525	25.86
Hammersmiths	16	82	49.5	108.7	224.4	8.2	49.2	51.4	95.7	38.06	95.95	357.80	.774	38.00
Handy men	94	1,066	49.4	103.4	215.1	8.1	48.6	51.9	93.6	24.05	50.59	115.73	.493	21.06
Hardeners	10	19	52.6	108.5	225.9	8.3	49.8	50.4	98.8	30.59	66.04	196.30	.652	32.79
Heaters	10	32	57.7	122.2	243.5	9.4	56.4	54.0	104.4	28.57	71.08	171.81	.565	31.36
Inspectors and testers	40	389	51.4	116.9	215.0	8.5	51.0	53.0	96.2	25.09	62.61	127.05	.516	26.66
Laborers	108	2,101	48.6	104.6	235.2	8.2	49.2	52.5	93.7	19.54	44.70	109.60	.409	20.13
Layout men and markers	21	80	49.5	106.7	244.9	8.4	50.4	51.6	97.7	34.85	69.18	177.95	.683	34.78
Machinists	99	1,483	47.5	99.2	246.0	7.9	47.4	49.6	95.6	33.91	71.73	173.74	.714	33.32
Milling-machine operators	55	363	50.0	107.9	216.6	8.2	49.2	51.8	95.0	26.53	65.04	138.63	.561	28.20
Millwrights	37	126	52.7	115.9	211.7	8.8	52.8	52.7	100.2	31.51	66.31	132.61	.591	31.12
Patternmakers	20	59	47.0	104.6	.....	7.9	47.4	51.3	92.4	34.09	66.88	.....	.700	33.28
Planers	66	325	50.1	109.0	223.4	8.4	50.4	51.5	97.9	30.96	73.95	195.12	.667	32.85
Punch-press operators	21	44	49.2	116.9	.....	8.4	50.4	52.6	95.8	24.49	59.53	.....	.508	25.43
Scrapers	6	32	47.6	127.8	.....	8.4	50.4	51.0	98.8	27.11	104.54	.....	.654	33.74
Screw-machine operators	39	179	49.6	118.1	219.0	8.4	50.4	52.2	96.6	26.30	59.49	123.49	.526	26.55
Shapers	45	134	47.5	107.2	224.1	8.1	48.6	51.3	94.7	27.21	60.04	151.79	.572	28.13
Sheet-metal workers	30	149	46.1	102.5	248.6	7.9	47.4	52.6	90.1	23.56	54.37	146.90	.529	24.82
Toolmakers	63	354	49.4	105.8	253.9	8.3	49.8	51.1	97.5	34.26	72.53	189.41	.699	37.97
Turret-lathe operators	49	309	49.1	101.3	224.0	8.1	48.6	51.2	94.9	26.88	57.98	172.13	.573	28.12
Welders	33	79	45.5	114.1	223.3	8.1	48.6	52.0	93.5	25.01	65.11	129.08	.561	27.39
Total	121	13,817	49.0	106.6	224.5	8.2	49.2	51.7	.....	26.95	61.15	139.67	.579	27.59

TABLE 4.—AVERAGE HOURS AND EARNINGS IN THE AUTOMOBILE, CAR, ELECTRICAL APPARATUS, FOUNDRY, MACHINE, MACHINE TOOL, AND TYPEWRITER INDUSTRIES, BY SEX AND OCCUPATION—Continued.

Machinery—Concluded.

Occupation.	Number of establishments.	Number of employees.	Average actual hours worked during one pay period.					Average full-time hours per week.	Per cent of full time worked.	Average actual earnings made during one pay period.				
			Weekly pay periods.	Biweekly and semi-monthly pay periods.	Monthly pay periods.	Per week day.	Per week.			Weekly pay periods.	Biweekly and semi-monthly pay periods.	Monthly pay periods.	Per hour.	Per week.
FEMALES.														
Assemblers	1	3	51.3	.....	.....	8.5	51.0	54.0	94.4	$12.07	.....	.....	$0.233	$12.07
Drill-press operators	5	17	44.6	99.0	.....	7.4	44.4	53.8	82.5	13.67	$39.49	.....	.333	14.73
Engine-lathe operators	4	9	35.3	93.5	.....	6.2	37.2	52.6	70.7	11.42	38.90	.....	.349	12.87
Fitters, second class	3	55	43.4	116.4	178.6	6.9	41.4	53.3	77.7	14.06	37.56	$76.67	.390	16.63
Grinders	3	4	39.0	128.0	.....	7.2	43.2	51.3	84.2	14.82	46.92	.....	.351	16.15
Inspectors and testers	3	22	46.5	.....	184.0	7.2	43.2	52.8	81.8	11.47	.....	64.65	.295	12.79
Milling-machine operators	5	22	34.6	128.0	202.8	7.4	44.4	52.3	84.9	12.07	66.10	96.46	.456	20.67
Punch-press operators	1	4	.....	.....	217.7	8.1	48.6	52.0	93.5	.....	.....	83.36	.384	18.53
Screw-machine operators	2	2	54.0	130.0	.....	9.2	55.2	54.5	101.3	13.37	46.27	.....	.302	16.60
Shapers	1	4	47.9	.....	.....	8.0	48.0	48.0	100.0	17.95	.....	.....	.375	17.95
Turret-lathe operators	1	1	18.0	.....	.....	3.0	18.0	54.0	33.3	4.95	.....	.....	.275	4.95
Total	11	143	42.9	112.7	186.7	7.1	42.6	52.9	80.5	12.90	43.36	79.54	.369	16.10

Machine tool.

MALES.														
Blacksmiths	25	56	45.2	123.6	197.2	8.3	49.8	53.8	92.6	$26.88	$79.00	$140.36	$0.610	$30.56
Blacksmiths' helpers	17	62	49.5	105.2	198.8	8.3	49.8	51.7	96.3	20.38	49.88	111.42	.498	24.79
Boring-mill operators	23	131	56.5	122.5	195.7	8.7	52.2	54.2	96.3	31.38	75.46	114.82	.589	30.87
Chippers	12	82	53.4	122.6	196.8	8.8	52.8	53.3	99.1	21.37	62.77	103.38	.450	24.15
Cranemen	14	37	52.6	110.5	205.5	8.7	52.2	54.9	95.1	21.64	54.77	100.70	.452	23.93
Drill-press operators	28	367	53.4	111.9	188.8	8.6	51.6	54.7	94.3	25.92	59.46	116.28	.522	27.00
Engine-lathe operators	28	880	52.4	108.4	193.2	8.5	51.0	53.8	94.8	26.93	60.82	123.53	.550	28.25
Fitters, first class	28	949	53.0	115.0	206.8	8.8	52.8	53.5	98.7	31.57	71.55	172.99	.676	35.66
Fitters, second class	26	691	53.9	108.0	198.4	8.7	52.2	53.9	96.8	26.46	55.41	120.51	.524	27.25
Gear cutters	24	159	54.1	117.2	195.3	8.9	53.4	53.3	100.2	29.79	58.67	132.98	.565	30.02
Grinders	27	319	53.7	114.5	188.5	8.8	52.8	54.9	96.2	28.65	61.46	122.43	.549	28.86
Hammersmiths	2	5	.....	.....	184.9	7.7	46.2	50.4	91.7	.....	.....	142.62	.755	35.66

Handy men	29	611	52.2	113.1	190.4	8.5	51.0	54.0	94.4	23.41	52.53	93.30	.462	23.66
Hardeners	12	82	53.9	108.6	231.5	8.9	53.4	54.0	98.9	31.25	60.14	190.45	.596	32.29
Inspectors	18	216	54.7	114.7	207.3	8.9	53.4	53.2	100.4	28.28	64.17	156.37	.574	30.59
Laborers	28	1,017	51.6	115.3	187.7	8.5	51.0	54.0	94.4	21.41	49.83	83.87	.424	21.86
Machinists	14	93	55.4	96.2	199.0	8.7	52.2	51.2	102.0	38.05	70.61	143.98	.705	36.77
Milling-machine operators	26	358	53.1	113.3	187.5	8.6	51.6	54.3	95.0	27.51	57.17	114.82	.534	27.43
Millwrights	16	74	57.0	126.3	195.0	8.5	51.0	52.0	98.1	35.38	72.30	139.26	.684	34.81
Pattern makers	23	91	51.6	111.5	200.1	8.6	51.6	54.4	94.9	30.64	78.51	132.93	.636	32.76
Planer operators	29	254	53.0	110.4	206.8	8.8	52.8	54.1	97.6	27.78	71.08	146.37	.587	31.11
Scraper hands	22	371	52.1	108.5	199.2	8.7	52.2	54.2	96.3	26.26	52.28	107.62	.501	26.04
Screw-machine operators	19	162	53.5	106.1	205.1	8.7	52.2	53.6	97.4	25.47	47.13	153.59	.552	28.59
Shaper operators	13	36	52.1	114.8	199.9	8.7	52.2	54.8	95.3	25.04	61.86	122.46	.514	27.11
Toolmakers	26	224	53.3	109.8	195.4	8.5	51.0	53.5	95.3	32.84	63.62	140.23	.639	32.47
Turret-lathe operators	22	235	52.4	124.2	203.8	8.9	53.4	54.4	98.2	25.68	73.63	120.59	.546	29.42
Other machine operators	19	128	51.8	66.1	153.3	8.1	48.6	53.4	91.0	25.01	40.66	95.90	.501	24.30
Total	29	7,681	52.8	112.7	196.0	8.6	51.6	53.9	95.8	26.74	59.98	125.05	.576	28.20
FEMALES.														
Drill-press operators	4	28	47.0	.....	119.8	7.0	42.0	51.8	81.1	14.59	.....	39.59	.316	13.25
Engine-lathe operators	5	44	48.4	.....	164.4	7.9	47.4	52.2	80.8	16.56	.....	40.50	.332	15.83
Gear cutters	3	14	44.9	.....	.....	7.5	44.9	49.4	91.1	18.48	.....	.....	.416	18.48
Grinders	1	5	43.4	.....	.....	7.2	43.4	50.0	86.4	16.06	.....	.....	.368	16.06
Handy men	1	4	50.9	.....	.....	8.5	50.9	55.0	92.7	15.42	.....	.....	.303	15.42
Inspectors	2	23	48.2	.....	.....	8.0	48.2	50.4	95.2	16.09	.....	.....	.334	16.09
Laborers	1	1	.....	.....	192.0	8.0	48.0	48.0	100.0	.....	.....	67.60	.352	16.90
Milling-machine operators	3	35	48.7	.....	175.6	7.8	46.8	52.5	89.1	18.22	.....	60.72	.366	17.18
Total	8	154	47.7	.....	156.9	7.7	46.2	51.6	89.5	16.62	.....	50.60	.338	15.95

Typewriter.

MALES.														
Aligners	14	265	57.3	129.9	.....	9.5	57.0	54.0	105.6	$37.05	$53.14	.....	$0.563	$32.19
Assemblers, final and sectional	28	1,591	50.5	112.9	.....	8.5	51.0	52.3	97.5	27.11	44.32	.....	.498	25.72
Assemblers, part, and welders	28	503	50.7	126.5	.....	8.6	51.6	53.3	96.8	21.12	45.13	.....	.398	20.77
Drill-press operators	26	546	50.3	112.2	.....	8.4	50.4	52.8	95.5	23.65	44.47	.....	.452	22.95
Filers, fitters, and straighteners	26	476	50.8	124.4	.....	8.6	51.6	52.7	97.9	26.91	49.94	.....	.498	25.85
Gear cutters and lathe and planer operators	21	136	51.7	111.0	.....	8.8	52.8	52.6	100.4	27.18	49.20	.....	.503	26.56
Grinders, machine	22	268	50.2	113.9	.....	8.4	50.4	52.6	95.8	27.03	42.07	.....	.514	25.51
Handy men	25	389	52.8	119.6	.....	8.8	52.8	52.7	100.2	23.30	40.55	.....	.416	22.23
Hardeners, case, and annealers	24	53	51.8	126.1	.....	8.7	52.2	51.5	101.4	25.45	57.00	.....	.485	25.48
Inspectors, final	27	525	51.3	136.3	.....	8.8	52.8	52.0	101.5	29.93	66.03	.....	.562	29.77
Inspectors, part	24	446	51.1	117.9	.....	8.6	51.6	52.3	98.7	22.74	44.02	.....	.437	22.23
Japanners and enamelers, first class	19	186	50.4	125.8	.....	8.5	51.0	52.2	97.7	27.77	47.28	.....	.545	27.25
Japanners and enamelers, second class	24	167	47.4	112.6	.....	7.9	47.4	52.8	89.8	21.91	40.11	.....	.446	21.09
Laborers	26	415	52.0	119.9	.....	8.8	52.8	52.8	100.0	20.13	39.34	.....	.376	19.79
Machine setters	25	255	53.3	134.6	.....	9.1	54.6	52.5	104.0	29.41	60.90	.....	.533	29.13

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TABLE 4.—AVERAGE HOURS AND EARNINGS IN THE AUTOMOBILE, CAR, ELECTRICAL APPARATUS, FOUNDRY, MACHINERY, MACHINE TOOL, AND TYPEWRITER INDUSTRIES, BY SEX AND OCCUPATION—Concluded.

Typewriter—Concluded.

Occupation.	Number of establishments.	Number of employees.	Average actual hours worked during one pay period.					Average full-time hours per week.	Per cent of full time worked.	Average actual earnings made during one pay period.				
			Weekly pay periods.	Biweekly and semi-monthly pay periods.	Monthly pay periods.	Per week day.	Per week.			Weekly pay periods.	Biweekly and semi-monthly pay periods.	Monthly pay periods.	Per hour.	Per week.
MALES—concluded.														
Machinists	24	176	52.5	110.8	.....	8.7	52.2	52.9	98.7	$30.79	$55.01	.....	$0.574	$30.00
Milling-machine operators	27	532	50.6	110.2	.....	8.4	50.4	53.0	95.1	23.97	42.98	.....	.454	23.03
Platers, electro	19	33	51.6	120.7	.....	8.5	51.0	52.9	96.4	28.45	58.52	.....	.538	28.01
Polishers, fine, and buffers	24	336	48.6	126.3	.....	8.3	49.8	52.5	94.9	28.78	55.12	.....	.566	27.98
Polishers, rough	22	129	50.1	114.9	.....	8.4	50.4	53.3	94.6	26.56	46.33	.....	.484	24.40
Punch-press operators	27	310	48.8	104.7	.....	8.1	48.6	52.0	93.5	22.01	37.84	.....	.437	21.21
Screw-machine operators	27	522	51.2	117.9	.....	8.4	50.4	52.6	95.8	28.14	49.48	.....	.521	27.10
Spring-winder operators	15	31	47.3	120.6	.....	8.1	48.6	51.8	93.8	20.28	44.88	.....	.415	20.27
Tool and die makers	28	590	52.2	113.1	.....	8.7	52.2	52.1	100.2	37.49	74.68	.....	.710	37.02
Total	28	8,880	51.1	118.6	.....	8.6	51.6	52.6	98.1	26.77	48.53	.....	.499	26.04
FEMALES.														
Aligners	4	19	54.1	129.4	.....	9.2	55.2	56.6	97.5	19.88	38.76	.....	.313	17.19
Assemblers, final and sectional	21	337	47.1	105.6	.....	7.9	47.4	51.8	91.5	16.35	27.29	.....	.317	15.02
Assemblers, part, and welders	22	718	48.1	106.3	.....	8.0	48.0	52.4	91.6	14.71	24.90	.....	.278	13.63
Drill-press operators	22	547	46.8	100.2	.....	7.7	46.2	51.1	90.4	14.76	25.09	.....	.296	13.91
Filers, fitters, and straighteners	18	469	41.4	118.6	.....	7.1	42.6	51.1	83.4	13.71	32.16	.....	.319	13.55
Gear cutters and lathe and planer operators	8	66	49.3	102.1	.....	8.0	48.0	50.9	94.3	15.36	24.67	.....	.301	14.78
Grinders, machine	6	25	46.2	140.0	.....	7.8	46.8	52.1	89.8	14.35	36.27	.....	.308	14.39
Handy men	9	29	45.7	85.8	.....	7.5	45.0	50.3	89.5	14.21	19.00	.....	.296	13.46
Inspectors, final	4	7	49.7	.....	.....	8.3	49.7	50.7	98.2	17.09	.....	.....	.343	17.09
Inspectors, part	22	572	46.9	101.3	.....	7.8	46.8	51.0	91.8	13.51	23.14	.....	.275	13.01
Japanners and enamelers, first class	3	4	51.7	138.0	.....	8.9	53.4	52.3	102.1	18.35	38.82	.....	.338	17.92
Japanners and enamelers, second class	12	79	47.0	106.4	.....	7.7	46.2	53.9	85.7	14.01	24.34	.....	.266	12.47
Laborers	11	72	46.7	128.2	.....	7.9	47.4	50.9	93.1	13.09	30.48	.....	.278	13.10
Milling-machine operators	19	196	47.1	107.0	.....	7.9	47.4	51.0	92.9	16.81	29.43	.....	.338	16.08
Polishers, final, and buffers	5	19	49.2	104.0	.....	8.4	50.4	54.3	92.8	18.27	42.60	.....	.368	18.61
Punch-press operators	13	274	47.7	114.5	.....	8.0	48.0	52.4	91.6	15.26	30.50	.....	.308	14.83
Screw-machine operators	8	30	48.4	86.8	.....	7.7	46.2	51.5	89.7	20.44	20.13	.....	.350	16.77
Spring-winder operators	8	35	45.2	86.2	.....	7.5	45.0	51.2	87.9	13.61	23.46	.....	.293	13.17
Total	25	3,498	46.4	106.0	.....	7.8	46.8	51.6	90.7	14.67	26.48	.....	.298	13.98

Wages and Hours of Labor in Anthracite Coal Mining Industry, 1919 and 1920.

THIS article presents in a summary form the facts as to the hours of labor and the earnings of employees in the anthracite coal fields of Pennsylvania in 1919 and 1920.

The figures for 1919 were gathered for the one-half month pay period ending January 31, while the figures for 1920 are for a similar period ending March 31. In the figures for 1919, 16,209 employees are represented, employed at 22 collieries of 10 companies, while for 1920, 10,821 employees are represented, employed at 16 collieries of 8 companies.

Five collieries for which figures are shown for 1919 are not included in the figures for 1920, because of circumstances which made it impossible to secure representative data from these establishments. Three collieries which furnished data in 1919 were shut down during the 1920 period because of floods which had drowned out the workings. Data were secured at two collieries in 1920, for which no figures were shown in 1919.

The periods for which figures are presented were ones of full production, all the collieries operating full time during the period in 1919, while only one lost any operating time during 1920. Out of 14 possible days of operation this colliery operated only 10 days, being forced to close down 4 days because of flood conditions.

The material on which this article is based was obtained directly from the pay rolls and other records of the several companies by agents of the Bureau. A record of the time spent in the mines by tonnage workers, which ordinarily does not form a part of the records, was especially kept during these periods. Because of the fact that the working places of the miners are widely distributed and at unequal distances from the entrances to the mines, the time checked was the time at which miners entered and left the mines. Consequently all figures relating to the hours of those miners and miners' laborers who work on a tonnage basis represent the time spent in the mines and not that spent at the working places. It is estimated that in general it takes the miners from 15 minutes to one hour to get to their working places after entering the mines.

The rates of wages and hours of labor in the anthracite coal industry in 1919 and 1920, by occupation, are shown in Table 1.

TABLE 1.—HOURS AND EARNINGS IN THE ANTHRACITE COAL MINING INDUSTRY, 1919 AND 1920.

Occupation.	Number of collieries.		Number of employees.		Average hours.								Average earnings.					
					Hours worked during one half month.		Hours worked per week day for half month.		Full time hours for half month.		Per cent of full time actually worked.		Earnings during one half month.		Earnings per hour.		Full time earnings for half month.	
	1919	1920	1919	1920	1919	1920	1919	1920	1919	1920	1919	1920	1919	1920	1919	1920	1919	1920
Inside.																		
Blacksmiths	13	8	30	20	124.7	123.7	8.9	8.8	112.0	112.3	111.3	110.2	$73.56	$71.44	$0.592	$0.578	$66.26	$64.85
Brattice men	17	14	116	111	111.9	121.3	8.0	8.7	112.0	112.2	99.9	108.1	62.80	68.97	.561	.569	62.83	63.79
Cagers	22	16	234	197	126.9	130.5	9.1	9.3	112.8	113.4	112.5	115.1	65.78	66.75	.517	.512	58.24	57.89
Car runners	17	15	342	233	109.9	116.1	7.9	8.3	112.1	112.1	98.0	103.6	55.62	58.53	.507	.505	56.85	56.58
Door tenders (boys)	20	14	247	156	106.8	102.5	7.6	7.3	112.0	112.0	95.4	91.5	33.66	31.36	.315	.306	35.13	34.24
Drivers	22	14	479	272	105.3	106.1	7.7	7.6	112.0	112.0	94.0	94.7	52.66	52.83	.499	.498	55.86	55.73
Engineers	17	14	121	100	130.9	120.0	9.2	8.6	117.9	117.0	111.0	102.6	70.34	67.41	.542	.555	63.25	65.02
Laborers	22	16	1,200	736	107.3	108.6	7.6	7.8	113.9	112.4	94.2	96.6	55.13	56.56	.519	.519	58.80	58.40
Laborers, company miners'	19	9	632	308	102.9	105.7	7.4	7.5	112.0	112.5	91.9	94.0	54.26	55.63	.526	.528	58.92	59.35
Laborers, consideration miners'	.....	10	.....	202	.....	94.3	.....	6.7	.....	112.1	.....	84.1	.....	50.97	.....	.542	.....	60.71
Laborers, contract miners'	21	14	1,855	1,191	78.7	82.0	5.6	5.9	112.0	112.0	70.3	73.2	49.99	55.77	.639	.679	71.57	76.00
Machinists	11	9	67	19	113.1	145.9	8.1	10.4	119.8	112.1	94.4	130.2	64.29	85.18	.568	.584	69.80	65.46
Masons	12	6	41	29	112.0	115.0	8.0	8.2	112.0	112.0	100.0	102.7	64.56	66.82	.577	.579	64.59	64.85
Miners, company	19	11	656	367	94.1	97.9	6.7	7.0	112.0	112.8	84.0	86.8	54.79	56.42	.581	.575	65.12	64.90
Miners, consideration	10	10	498	480	101.4	97.6	7.2	7.0	112.0	112.5	90.5	86.8	64.24	64.33	.636	.657	71.19	73.88
Miners, contract	22	16	4,887	3,188	94.5	91.8	6.8	6.6	112.0	112.1	84.4	81.9	79.56	84.86	.842	.934	94.29	104.79
Motor brakemen	18	14	190	178	119.3	116.1	8.5	8.3	112.0	112.2	106.5	103.5	59.84	57.69	.502	.497	56.20	55.74
Motormen	19	15	247	202	130.4	131.7	9.3	9.4	112.0	112.3	116.4	117.3	72.78	73.02	.558	.554	62.47	62.20
Pump men	21	15	104	99	174.2	169.0	12.4	12.1	179.6	169.9	97.0	99.5	70.42	70.46	.413	.429	73.09	70.61
Timbermen	15	13	136	97	99.8	106.7	7.1	7.6	112.0	112.0	89.1	95.3	58.97	61.66	.613	.577	68.69	64.67
Trackmen	22	16	163	123	114.5	120.8	8.2	8.6	112.0	112.2	102.2	107.7	65.44	69.85	.570	.578	63.89	64.80
Total, inside	22	16	12,245	8,308	98.7	99.4	7.1	7.1	112.9	113.0	87.4	88.0	65.18	68.56	.672	.710	75.59	79.95
Outside.																		
Ash men	19	15	72	53	129.0	126.0	9.1	9.0	123.8	127.7	104.2	98.7	56.82	56.62	0.444	0.452	54.57	57.61
Blacksmiths	22	16	60	39	127.0	134.0	9.1	9.6	112.0	112.1	113.4	119.5	71.96	76.86	.572	.574	64.02	64.40
Cagers	22	15	119	84	132.4	132.1	9.5	9.4	113.3	115.8	116.9	114.1	60.65	59.31	.458	.449	51.81	51.09
Carpenters	22	16	250	163	132.4	136.1	9.5	9.7	112.8	112.4	117.4	121.1	74.29	74.64	.560	.547	63.22	61.45
Car runners	15	10	83	46	109.8	114.1	7.8	8.2	112.0	112.4	98.0	101.5	49.73	51.32	.454	.450	50.81	50.57
Dumpers	19	16	88	57	111.1	119.5	7.9	8.5	112.0	112.1	99.2	106.6	49.83	53.60	.449	.446	50.27	50.18
Engineers	22	16	248	185	140.0	140.7	10.1	10.0	120.8	129.2	115.9	108.9	73.80	74.81	.532	.538	63.00	68.65

Firemen	22	16	314	217	128.6	133.2	9.0	9.5	127.3	127.4	101.0	104.6	64.62	66.71	.503	.501	63.98	63.89
Jig runners	18	12	81	54	129.1	123.4	9.2	8.8	112.0	112.4	115.3	109.8	53.70	52.59	.410	.424	45.93	47.72
Laborers	22	16	1,211	718	120.0	118.5	8.5	8.5	114.9	113.4	104.4	104.5	51.94	51.94	.434	.438	49.69	49.61
Loaders	21	16	199	142	122.6	119.2	8.8	8.5	112.0	112.2	109.5	106.2	54.92	53.51	.448	.449	50.14	50.33
Machinists	20	14	112	117	141.9	150.3	10.1	10.7	112.0	113.5	126.7	132.4	72.81	76.58	.517	.509	57.85	57.73
Oilers	21	15	77	42	129.7	114.9	9.3	8.2	112.0	112.0	115.8	102.6	56.58	50.60	.434	.438	48.58	49.12
Plate men	21	14	180	112	118.7	124.1	8.2	8.8	112.0	112.3	106.0	110.5	51.13	53.27	.430	.423	48.18	47.52
Repair men	10	5	113	21	123.5	121.3	8.8	8.7	112.0	112.0	110.3	108.3	59.90	58.24	.485	.480	54.31	53.71
Slaters (boys)	21	15	580	345	99.9	100.6	7.1	7.2	112.0	112.2	89.2	89.7	29.95	30.51	.298	.303	33.41	33.95
Timber cutters	19	14	115	92	130.3	127.9	9.3	9.1	112.0	112.5	116.3	113.7	58.91	57.31	.452	.448	50.67	50.40
Trackmen	14	8	28	26	115.7	133.0	8.3	9.5	112.0	112.5	103.3	118.2	55.26	60.43	.477	.454	53.40	51.10
Total, outside	22	16	3,930	2,513	121.5	123.2	8.6	10.1	115.0	115.6	105.7	106.6	54.37	55.81	.442	.446	50.81	51.70
Total, inside and outside	22	16	16,175	10,821	104.1	104.9	7.4	7.8	113.4	113.6	91.8	92.3	62.54	65.60	.617	.648	69.67	73.39

At the foot of each division of the table are shown the hours and earnings of the entire number of employees working inside and outside, respectively, and at the bottom of the table are shown the figures for all outside and inside occupations combined. A word of explanation may be needed as to how the figures in some of the columns were obtained.

The average hours actually worked were obtained by adding the hours actually worked by all employees in the occupation and dividing the sum by the number of employees in the occupation. The figures in the column headed "Average hours worked per week day" were obtained by ascertaining for each employee in the occupation the full number of hours worked by him during the period and dividing that aggregate by the number of week days in the pay-roll period. The result represents the number of hours per day that would have been worked by the employee if the work had been distributed uniformly over the week days of the pay-roll period. By dividing the sum of the hours of all employees in an occupation by the total number of employees in that occupation the average number of hours per week day in the occupation is ascertained.

By full-time hours is meant the number of hours which are regarded by employer and employee as constituting a day's work. The average full-time hours of the pay-roll period given in column 5 were obtained by multiplying the regular daily working hours in each occupation by the number of days constituting the full half-month pay-roll period. The aggregate of such hours for all the employees in each occupation was divided by the total number of employees in the occupation. The quotient is the average full-time hours of all employees in the occupation.

The average earnings actually received during the pay-roll period were computed by dividing the aggregate earnings for all the employees in each occupation by the number of employees in that occupation. As this figure includes the earnings of part-time workers as well as those of employees who worked continuously during the entire period, care should be taken not to confuse it with the full-time earnings which are shown in the last column. The average hourly earnings were obtained by dividing the aggregate hourly earnings of all the employees in an occupation by the number of employees in the occupation. The average full-time earnings is the product of the average earnings per hour and the number of hours in the pay-roll period. The figure represents the amount that would have been earned by an employee in any occupation, if he had worked the full-time hours of the occupation and received the average hourly earnings of his occupation for each hour that he worked.

Most of the information about hours and earnings contained in the table can be easily interpreted without comment. Thus the data given for blacksmiths among the inside occupations show that in 1919 they were found to the number of 30 distributed among 13 establishments; that they worked on an average 8.9 hours per week day; that while their full-time hours for the half month were 112 they actually worked during the half month an average of 124.7 hours. The average amount of money earned

by these 30 blacksmiths was $73.56 per person, which shows earnings at the rate of 59.2 cents per hour. Any blacksmith who earned that rate per hour and worked the full-time hours of his occupation and no more would have earned during the pay-roll period $66.26, the amount shown as full-time earnings. As the corresponding figures for 1920 are in each case put immediately beside those for 1919, an easy comparison of the two years can be made.

Attention may be called to the relative hours of contract miners and contract miners' laborers. As will be seen from the part of the table for inside employees in 1919, the 4,887 contract miners included in the survey worked on an average 6.8 hours per day, while the average of 1,855 contract miners' laborers was only 5.6 hours. It would naturally be expected that the hours of the miners would be less than those of the miners' laborers. It has been the general practice in the past for a miner to work until he has brought down enough coal to keep his laborers busy for the rest of the day and then to leave the mine. Apparently the shortage of contract miners' laborers, which has prevailed for some time, has brought about a change in the practice in this respect. This shortage of laborers may be inferred from the fact that whereas formerly each miner employed one or more laborers to load the coal that he brought down, the figures in the survey show more than two and one-half times as many contract miners as contract miners' laborers. From this it is to be inferred that a large proportion of the miners remain in the mine and load their own coal; that they spend so many additional hours in loading coal that even when their hours are combined with the shorter hours of miners who depend upon laborers to load their coal, the average for the whole group of miners is very considerably increased, and, in fact, exceeds the average hours worked by the contract miners' laborers. It is probable that the relatively short hours of the contract miners' laborers in comparison with the hours of the miners were due to the restless spirit prevailing among the laborers at the time of the survey. This restlessness caused much shifting of laborers from mine to mine and from district to district in search of working places where either better conditions could be found or more money could be made.

A glance at the similar figures for 1920 shows that the 3,188 contract miners, for whom figures are presented, worked an average of 6.6 hours per day, while the 1,191 contract miner's laborers worked an average of 5.9 hours per day. Thus it is seen that while the working time of miners has decreased two-tenths of an hour per day and that of laborers has increased three-tenths of an hour per day the relation between them found in 1919 still exists, although the difference is now reduced to seven-tenths of an hour per day.

In Table 2 are shown data similar to that in Table 1, but giving the averages of each colliery separately, for two occupations, namely, contract miners, and contract miners' laborers.

TABLE 2.—HOURS OF LABOR AND EARNINGS, BY COLLIERY, IN THE ANTHRACITE REGION IN 1920.

Occupation, establishment, and colliery.	Number of employees.	Average hours.			Average earnings.		
		Hours worked in half month.	Hours worked per week day in half month.	Full-time hours in half month.	Earnings in half month.	Earnings per hour.	Full-time earnings in half month.
Contract miners.							
Establishment A—							
Colliery 1	214	94.3	6.7	112.0	$93.61	$1.003	$112.28
Colliery 3	162	99.0	7.1	112.0	91.23	.927	103.82
Colliery 4	472	94.6	6.8	112.0	86.85	.921	103.20
Establishment B—Colliery 1	110	103.8	7.4	112.0	89.02	.857	95.98
Establishment C—Colliery 1	327	84.9	6.1	112.0	69.27	.811	90.81
Establishment D—							
Colliery 1	117	90.8	6.5	112.0	85.81	.946	105.95
Colliery 2	30	108.6	7.8	112.0	88.40	.812	90.92
Colliery 3	131	88.3	6.3	112.0	78.26	.896	100.39
Establishment E—Colliery 1	121	96.6	6.9	112.0	85.49	.885	99.17
Establishment G—							
Colliery 1	203	98.9	7.1	112.0	79.37	.808	90.51
Colliery 2	150	94.0	6.7	112.0	75.25	.813	91.02
Establishment H—							
Colliery 1	237	65.3	4.7	112.0	57.35	.880	98.56
Colliery 2	212	85.4	6.1	112.0	88.92	1.039	116.32
Establishment I—Colliery 1	232	101.5	7.3	112.0	77.03	.770	86.30
Establishment J—							
Colliery 1	331	93.8	6.7	113.0	108.04	1.199	135.48
Colliery 2	139	93.6	6.7	113.0	111.61	1.214	137.16
Contract miners' laborers.							
Establishment A—							
Colliery 1	224	76.2	5.4	112.0	56.59	.738	82.67
Colliery 3	139	91.3	6.5	112.0	57.85	.632	70.80
Colliery 4	120	80.9	5.8	112.0	51.92	.638	71.42
Establishment B—Colliery 1	55	97.5	7.0	112.0	77.30	.783	87.69
Establishment C—Colliery 1	87	63.1	5.0	112.0	47.81	.744	83.36
Establishment D—							
Colliery 1	31	79.9	5.7	112.0	53.47	.662	74.16
Colliery 2	14	95.7	6.8	112.0	74.71	.772	86.43
Colliery 3	128	91.1	6.5	112.0	56.76	.627	70.24
Establishment E—Colliery 1	69	95.3	6.8	112.0	72.08	.761	85.20
Establishment G—							
Colliery 1	80	75.9	5.4	112.0	47.78	.629	70.42
Colliery 2	93	82.8	5.9	112.0	61.10	.730	81.81
Establishment H—Colliery 1	38	54.9	3.9	112.0	35.68	.644	72.09
Establishment I—Colliery 1	99	83.5	6.0	112.0	46.12	.570	63.85
Establishment J—							
Colliery 2	14	93.4	6.7	113.0	49.17	.527	59.55

In will be noticed that in this table the average hours worked per day appear very low for colliery 1, establishment H. This is caused by the fact that this colliery was operated only 10 days during the period, while in computing average hours per day the time worked by the men during these 10 days was spread over the entire 14 days.

In anthracite mines generally high earnings are found in the same mines in which short hours are worked. For example, at colliery 1, establishment A, contract miners earned an average of $1.003 per hour and worked only an average of 6.7 hours per day, while at colliery 2, establishment D, where they earned only $0.812 per hour, an average of 7.8 hours per day was worked. Examination of the remainder of the collieries will show that while this relation does not hold at all collieries, yet the general tendency is that the earnings per hour and hours worked per day vary in inverse proportion. As this same fact

was found to exist in the figures for 1919, it seems that this relation between high earnings and low hours is caused by something other than a temporary condition.

In the following table the collieries have been divided into two groups, those in which the contract miners averaged 6.8 hours per day or more and those at which less than 6.8 hours per day were worked. Colliery 1, establishment H, has been omitted from this table because of the fact that it was in operation only 10 days during the 14-day period.

TABLE 3.—HOURS AND EARNINGS OF CONTRACT MINERS IN 1920.

Group.	Number of collieries.	Number of employees.	Average hours worked per day.	Average earnings per hour.
Group 1	7	1,330	7.0	$0.867
Group 2	8	1,621	6.5	.997

In the report on the investigation of the anthracite coal industry in 1919, it was pointed out that the number of contract miners' laborers was abnormally low. The figures for 1920 indicate that the shortage of such labor has become more acute. Making a comparison between 14 identical collieries, we find that in 1919 there were 3,218 contract miners and 1,402 contract miners' laborers. In that year the number of laborers was 47 per cent of the number of miners. In 1920 there were found in the same collieries 3,027 contract miners and 1,049 contract miners' laborers. The number of laborers is now only 35 per cent of the number of contract miners. Under the mining laws of the State of Pennsylvania a man who desires a certificate to work as a contract miner must have been employed at least two years as a miner's laborer. Unless the present tendency toward shrinkage in the percentage of miners' laborers is reversed in the near future, the problem of securing an adequate number of qualified miners is likely to become serious.

An examination of any of the tables already presented will show discrepancies between the hours actually worked in many occupations and the full-time hours of the occupation and corresponding differences between actual earnings for the pay-roll period and full-time earnings, or the amount that would have been earned if the employees had worked the full-time hours of the occupation. The facts as to irregularity of work are presented in Table 4. Employees in each occupation are grouped according to the percentage of full time actually worked by them. In the first part of the table the number of employees in each group is shown, and in the second part the percentage which that number constitutes of the total number of employees in the occupation.

TABLE 4.—NUMBER AND PER CENT OF EMPLOYEES WORKING EACH SPECIFIED PER CENT OF FULL TIME, BY OCCUPATION.

Occupation.	Number of establishments.	Number of employees.	Number of employees working each specified per cent of full time.						Per cent of employees working each specified per cent of full time.					
			Under 25.	25 and under 50.	50 and under 75.	75 and under 100.	100.	Over 100.	Under 25.	25 and under 50.	50 and under 75.	75 and under 100.	100.	Over 100.
Inside:														
Blacksmiths	8	20	.....	.....	1	3	4	12	.....	.....	5	15	20	60
Brattice men	14	111	1	.....	12	23	9	66	1	.....	11	21	8	59
Cagers	16	197	1	2	19	28	14	133	1	1	10	14	7	68
Car runners	15	233	4	6	10	69	17	127	2	3	4	30	7	55
Door tenders (boys)	14	156	4	2	16	63	42	29	3	1	10	40	27	19
Drivers	14	272	7	10	28	99	27	101	3	4	10	36	10	37
Engineers	14	100	2	3	5	19	25	46	2	3	5	19	25	46
Laborers	16	736	35	27	67	173	110	324	5	4	9	24	15	44
Laborers, company miners'	9	308	11	19	21	91	39	127	4	6	7	30	13	41
Laborers, consideration miners'	10	202	13	10	26	71	57	25	6	5	13	35	28	12
Laborers, contract miners'	14	1,191	125	113	215	366	96	76	10	9	18	48	8	6
Machinists	9	19	1	.....	.....	.....	.....	18	5	.....	.....	.....	.....	95
Masons	6	29	.....	.....	1	9	9	10	.....	.....	3	31	31	34
Miners, company	11	367	43	23	33	87	54	127	12	6	9	24	15	35
Miners, consideration	10	480	16	28	77	147	131	81	3	6	16	31	27	17
Miners, contract	16	3,188	48	139	599	1,729	390	283	2	4	19	54	12	9
Motormen	15	202	3	4	6	28	3	158	1	2	3	14	1	78
Motor brakemen	14	178	4	5	18	31	5	115	2	3	10	17	3	65
Pump men	15	99	3	.....	3	17	34	42	3	.....	3	17	34	42
Timbermen	13	97	2	10	6	20	20	39	2	10	6	21	21	40
Trackmen	16	123	.....	1	4	25	19	74	.....	1	3	20	15	60
Total, inside occupations	16	8,308	323	402	1,167	3,298	1,165	2,013	4	5	14	40	13	24
Total, mining occupations	16	5,736	256	332	971	2,691	767	719	4	6	17	47	13	13
Total, all other inside occupations	16	2,572	67	70	196	607	338	1,294	3	3	8	24	13	50
Outside:														
Ash men	15	53	2	.....	5	9	16	21	4	.....	9	17	30	40
Blacksmiths	16	39	1	.....	1	5	5	17	3	.....	3	13	13	69
Cagers	15	84	.....	4	3	20	4	53	.....	5	4	24	5	63
Carpenters	16	163	2	2	3	22	8	126	1	1	2	13	5	77
Car runners	10	46	.....	.....	3	19	4	20	.....	.....	7	41	9	43
Dumpers	16	57	1	1	1	11	9	34	2	2	2	19	16	60
Engineers	16	185	.....	3	3	20	62	97	.....	2	2	11	34	52
Firemen	16	217	1	.....	10	51	66	89	(1)	.....	5	24	30	41
Laborers	16	718	15	23	45	174	94	367	2	3	6	24	13	51
Loaders	16	142	3	3	14	25	27	70	2	2	10	18	19	49
Machinists	14	117	1	.....	3	4	6	103	2	.....	3	3	5	88
Oilers	15	43	1	1	2	7	5	26	2	2	5	17	12	62
Repair men	5	21	.....	.....	.....	2	9	10	.....	.....	.....	10	43	48
Timber cutters	14	92	3	1	3	15	6	64	3	1	3	16	7	70
Trackmen	8	26	.....	.....	2	4	2	18	.....	.....	8	15	8	69
Outside breaker:														
Jig runners	12	54	1	.....	.....	7	18	28	2	.....	.....	13	33	52
Plate men	14	112	.....	2	3	31	15	61	.....	2	3	28	13	54
Slaters (boys)	15	345	9	13	32	131	95	65	3	4	9	38	28	19
Total, outside occupations	16	2,513	40	53	133	557	451	1,279	2	2	5	22	18	51

[1] Less than one-half of 1 per cent.

An examination of the table brings out the fact that a very small percentage of the employees in either outside or inside groups worked exactly full time. Of all inside employees in anthracite mines 13

per cent are recorded as working full time and no more, while of all outside employees the corresponding number is 18 per cent. If the figures for the miners and the miners' laborers, that is, the employees who are engaged directly in mining and getting out the coal, are segregated and compared with the figures for the remaining employees of the mine, an interesting situation is revealed. It is found that of the 5,736 miners and miners' laborers only 26 per cent worked full time or over, whereas of all the employees in the remaining inside occupations 63 per cent worked full time or over and in outside occupations 69 per cent are found in the same class. The largest group of miners and laborers, constituting 47 per cent of the entire number, is found in the class which worked between 75 per cent and 100 per cent full time, while only 24 per cent of laborers in other inside occupations and 22 per cent of laborers in outside occupations are in that group. Further computation would show that the 5,736 miners and miners' laborers worked on the average 81.5 per cent of full time, while the 5,085 employees in other occupations, inside and outside, worked 104.2 per cent of full time.

The following table of index numbers shows the effect upon the wages of contract miners of the various wage increases that have been granted since 1913. The contract rates in effect in 1913 have been used as the base, and to this have been applied the successive increases.

Relative wage rates of anthracite contract miners.

1913	100.0
1914	100.0
1915	100.0
1916	107.0
1917, May	117.7
1917, December	133.8
1918, November	149.8
1919	149.8
1920	149.8

The first increase after 1913, amounting to 7 per cent on tonnage rates, was granted on May 5, 1916, making the index number 107.

Since 1916 three new voluntary agreements have been entered into, each of which provided an increase in rates. These agreements unlike those of former years, gave a percentage increase on the earnings which should be made instead of a rate increase.

By these agreements the rates in effect in 1916 have been maintained and all increases have been applied to earnings made at these rates. Thus the agreement effective May 1, 1917, provided for the addition of 10 per cent to the gross earnings of each miner at the rate in effect in 1916; this was replaced by an increase of 25 per cent on December 1, 1917; and finally on November 15, 1918, the latter increase was replaced by an increase of 40 per cent on the gross earnings at the 1916 rate. Under these last three agreements it will be seen that the net increase in miner's rates above the 1913 base has been 17.7, 33.8, and 49.8 per cent, respectively.

The agreement of November 15, 1918, automatically expired on March 31, 1920, and a new agreement is now being negotiated.

Increases in Rates of Wages in Bituminous Coal Mines.

IN THE MONTHLY LABOR REVIEW for December, 1919, (p. 227) there was published a table showing the relative increases in the rates of wages of inside employees in the bituminous coal mines in the Hocking Valley district of the Central Competitive Field from 1913 to 1917.

Since those figures were published there have been two changes in the rates in question. The first was the award of the Fuel Administrator in November, 1919; the second, the award of the Bituminous Coal Commission, which replaced the award of the Fuel Administrator and took effect April 1, 1920. The conditions prevailing and the circumstances leading up to these awards were discussed in the MONTHLY LABOR REVIEW for December, 1919 (pp. 61–78), and for April, 1920 (pp. 40–50).

The following index numbers show the relative increases in this district, from 1913 to 1920, including the effect of the awards by the Fuel Administrator and the Coal Commission.

The rates in force in 1913 have been used as the base, and are represented by 100. Occupations which were paid the same rate in 1913, and which have received identical increases since, have been grouped together.

The index numbers for occupations paid on a tonnage basis are based on the rate per ton for mine-run coal. In 1913 the rate per ton was given for screened coal; this rate has been converted to a mine-run basis by assuming that screened coal constituted 65 per cent of mine-run coal.

In computing the relative for all inside occupations combined, the index number for each group was weighted by the number of employees found in that group on the pay rolls of the companies in the Hocking Valley district visited by agents of the Bureau during the Industrial Survey of 1919. The sum of the weighted numbers was then divided by the aggregate of the weights, and the relative for the final group "All occupations combined" was thus obtained. This relative shows the average increase of all inside occupations.

It should be stated that the most recent increase in wages yields the inside employees collectively 29.7 per cent over the rates established in November, 1917. The average of the outside employees, however, is considerably lower than this figure and if weighted in a manner similar to that used for inside employees and then combined with the inside employees, the general average increase for all employees, inside and outside, would be the 27 per cent which has been announced as the increase granted.

INDEX NUMBERS OF RATES OF WAGES OF INSIDE EMPLOYEES IN BITUMINOUS COAL MINES IN THE HOCKING VALLEY DISTRICT.

(Rates for 1913=100.)

Occupation group and year.	Index number.	Weight number.
1. Machine mining—Cutters and loaders:		
1913	100.0	6,878
1914	104.8	
1915	104.8	
1916	111.5	
1917, April	133.8	
1917, November	156.1	
1918	156.1	
1919	177.9	
1920, April	209.6	
2. Hand mining—Pick miners:		
1913	100.0	1,872
1914	104.0	
1915	104.0	
1916	104.1	
1917, April	119.4	
1917, November	134.8	
1918	134.8	
1919	153.7	
1920, April	171.8	
3. Tracklayers' helpers:		
1913	100.0	440
1914	100.0	
1915	100.0	
1916	105.0	
1917, April	127.9	
1917, November	181.3	
1918	181.3	
1919	206.9	
1920, April	219.5	
4. Pipemen:		
1913	100.0	110
1914	100.0	
1915	100.0	
1916	105.0	
1917, April	126.6	
1917, November	177.0	
1918	177.0	
1919	201.8	
1920, April	213.0	
5. Trappers (boys):		
1913	100.0	120
1914	100.0	
1915	100.0	
1916	106.1	
1917, April	143.9	
1917, November	200.8	
1918	200.8	
1919	228.8	
1920, April	240.9	
6. Cagers, drivers, haulers, motormen, timbermen, tracklayers, trip riders, and wiremen:		
1913	100.0	1,913
1914	100.0	
1915	100.0	
1916	104.9	
1917, April	126.8	
1917, November	176.1	
1918	176.1	
1919	200.7	
1920, April	211.3	
All groups combined:		
1913	100.0	.....
1914	103.6	
1915	103.6	
1916	108.8	
1917, April	130.0	
1917, November	157.6	
1918	157.6	
1919	179.6	
1920, April	204.4	

From the table it is seen that the different groups have had percentage increases that fall within a comparatively narrow range, with the exception of trapper boys and pick miners.

The large increase for trapper boys seems to be justified by the very low rate that they have been receiving for many years. The reason for such a wide difference in the percentage of increase between pick miners, with an increase of 71.8 per cent, and machine miners, whose increase has been 109 per cent, is not very clear, especially as in 1919 machine miners in the Central Competitive Field made average earnings of $1 per hour, while hand miners in the same territory averaged only $0.81 per hour.

The most apparent effect is that the payment of so much higher rates to machine miners will probably induce a large number of hand miners to become proficient in the use of mining machines. It would seem, however, that any such additional increases for machine miners beyond a certain point will ultimately make this style of mining less profitable and consequently less desirable to the operators than the old hand-mining method, and will cause them to hesitate in the installation of the expensive machines required. When this point is reached, the operators will be compelled to adopt the stand

that the miners have occupied since the first installation of mining machines, that of a preference for hand mining as opposed to machine mining. Just how much excess of labor cost machine mining can carry is problematical, but it is easily seen that if machine miners continue to receive increases in excess of those granted to hand miners, the point will be reached where machine mining will cease to be as profitable as hand mining. The rate paid under the last award for machine-mined coal in this district is $0.94 per ton, while for hand-mined coal the rate paid per ton is $1.116.

Decision of Kansas Court of Industrial Relations as to Wages on Interurban Railways.

THE Court of Industrial Relations of the State of Kansas announced on April 23 its findings in a case involving all classes of employees of the Joplin & Pittsburg Railway Company of Kansas and Missouri. The complainants were 158 members of a local union composed entirely of employees of the railway. The company operates an electric interurban road, carrying freight and passengers between various points in Kansas and extending also to Joplin, Mo. This necessitated the decision of a contention raised by the company that the court had no jurisdiction on account of the interstate character of the business, which would place the company exclusively under the provisions of the Federal transportation act of February 28, 1920.

This contention was decided adversely to the company, and it was permitted to answer as to the complaints of its employees. It first alleged a contract dated August 1, 1914, to run for six years, which it held to be in full force and controlling the subject of wages. It also denied that there was any controversy endangering or likely to endanger the operation of its business, and further alleged its financial inability to pay a higher wage. A large amount of evidence was taken, and it appeared that within recent years a strike of 80 days had occurred, paralyzing the business, and entailing a loss to the company of more than $68,000. A similar strike of nearly one-half the same duration occurred later. Besides the loss to the company, there was the wage loss to the men and great economic waste in that portion of Kansas and Missouri served by the company. A wage controversy had been submitted to the joint chairmen of the War Labor Board, and a decision was rendered by them on July 31, 1918. This fixed the rate per hour for shopmen, barn men, motormen, and conductors. The least skilled labor of a mechanical nature was paid 42 cents per hour, while motormen and conductors began at 38 cents, and after one year's service were to receive 42 cents. A higher wage was paid to machinists, painters, and armature winders, being 51½ cents per hour. This award was to continue for the duration of the war, with right to ask for adjustments not sooner than six months after February 1, 1919. Since the War Labor Board had gone out of existence, the complainants referred their case to the State industrial court, while the company relied on the contract of August, 1914.

The court held that the contract of 1914 was not effective, and took into consideration the various elements involved in the case. Among these was considerable variety in skill and responsibility necessary for the performance of the various duties of the employees under consideration. The increase in cost of living was such that some of the workmen were unable to support their families without getting into debt or drawing on previous savings. Some did additional labor after having performed a full day's work at their regular employment. Reference was made in the opinion to the decision in the Topeka Edison Co. case, noted in the May REVIEW (pp. 52–54), as to the rights of workingmen to procure for themselves and their families "all the necessities and a reasonable share of the comforts of life." The factors to be considered, as wages in the locality for like work, cost of living, skill, degree of responsibility, character of employment, and qualifications of the individual employee were enumerated, as in the earlier case.

A serious difficulty was found to exist in the lack of financial ability of the employer. It was pointed out, however, that the court had recently authorized an increase in the charges of the company which would probably considerably increase its earnings. The duty of the court to permit a fair return was touched upon, but it was declared "that wages to labor should be considered before dividends to the investor, and that a business which is unable to pay a fair rate of wage to its employees will eventually have to liquidate." The industry was said to be essential, but its conduct necessitates the payment of such wages as would retain competent services. The situation was held to involve a threat of industrial strike, disorder and waste. It was felt, therefore, that the court should establish a wage scale, which was, however, restricted "to such employees of the respondent as are actually bona fide residents of the State of Kansas, and whose work is located wholly or principally within said State." The scale was to come into effect on the 1st day of May, 1920, and to continue in force for a period of six months, or until changed by agreement of the parties with the approval of the court. The following is the new wage scale:

Motormen and conductors:	
First 3 months	45 cents per hour.
Next 9 months	48 cents per hour.
Next 12 months	51 cents per hour.
After 2 years	55 cents per hour.
Blacksmiths	55 cents per hour.
Blacksmith helpers	45 cents per hour.
Machinists	60 cents per hour.
Machinist helpers	45 cents per hour.
Carpenters, first class	55 cents per hour.
Carpenters, second class	48 cents per hour.
Painters	55 cents per hour.
Painters' helpers	45 cents per hour.
Pitmen	55 cents per hour.
Pitmen helpers	45 cents per hour.
Armature winders	60 cents per hour.
Armature winder helpers	45 cents per hour.
Car cleaners	45 cents per hour.
Headlight, tail-light and telephone men	$135 per month.

All of said wages to be on the same basis heretofore existing as to hours of labor and overtime.

Rise of Wages in British Industries.

WHILE no serious stoppage of work has actually taken place since the railway strike of September, 1919, with the exception of the less disturbing molders' strike ending in January, there have been numerous threats of such calamities and in two instances at least strikes have been narrowly averted through the tactful and dexterous handling of the situation by the Government. In recent weeks the scramble for increases in wages has become more acute—each industry watching every other industry's efforts with apprehension lest its own advances should be surpassed by those granted to other workers.

It has become increasingly apparent also that the life of an agreement is to the last degree precarious. This is forcefully illustrated by the most recent demand of the railway men, noted elsewhere in this article, which was promulgated exactly five days after the final signing in March of the agreement arrived at in January. (See MONTHLY LABOR REVIEW, March, 1920, pp. 16–25.)

The dockers' success in winning a favorable report (See MONTHLY LABOR REVIEW, May, 1920, pp. 54 to 62) from the court of inquiry regarding their demand for a 16 shilling ($3.89, par) per day minimum particularly seems to have incited other industries whose workers have perhaps felt superior to dock laborers as a class and who therefore did not view with equanimity the advances recommended for the dockers. Dr. Arthur Shadwell has recently said that the fact that dock labor is in a very large proportion uncertain labor—

* * * is entirely overlooked in the claim that other industries not subject to the same disabilities are entitled to the same treatment as dockers. Railway men, in particular, enjoy the great benefit of regular, assured, and permanent employment. The comparison is therefore fallacious, and furnishes no justification for tearing up a recent agreement concluded with all solemnity and infinite pains.

But I fear that reason and equity have nothing to do with the systematic pushing of alternate claims, which resembles a game of endless leapfrog. It has long been evident that there is in the background a concerted plan of campaign for making it impossible to carry on certain large industries by a ceaseless series of progressive demands. The object is to bring about the collapse of the "capitalist system," which is the first step toward the millenium. Agreements are merely obstacles to be ignored or smashed. And the worst of it is that those trade-union leaders who are honestly trying to get justice for the men and to keep the peace are sacrificed with the agreements they have concluded. They are placed in a humiliating and, indeed, impossible position. Their work is no sooner done than it is undone and has to be begun again.

During March and April, the following advances were agreed upon:

Engineering and shipbuilding trades, 3 shillings (73 cents, par) a week on April 1, and 3 shillings on June 1.

Miners, 20 per cent, with a minimum of 2 shillings (48.7 cents, par) a day.

Railway shopmen, 6 shillings ($1.46, par) a week.

Road transport workers, 5 shillings ($1.22, par) a week.

Agricultural laborers, 4 shillings (97.3 cents, par) a week.

Tinplate and steel workers, 40 per cent.

Dockers, minimum of 16 shillings ($3.89, par) a day.

The following claims are under negotiation:

Cotton operatives, 60 per cent on current rates.[1]

[1] This was reduced to 35 per cent on Apr. 29, but the employers would offer 25 per cent only.

Tramway workers, 10 shillings ($2.43, par) a week.
Omnibus workers, 10 shillings ($2.43, par) a week.
Builders (London), 1 shilling (24.3 cents, par) an hour.
Postal workers, equivalent of prewar wages, with addition of 10 shillings ($2.43, par) a week.
General workers, £1 ($4.87, par) a week.
Shop assistants, at least 25 per cent.
Railway men, £1 ($4.87, par) a week to all grades.

The Labor Gazette for April gives an account of the increase in rates of wages in the chief industries of the United Kingdom, from July, 1914, to the end of February, 1920. The percentages of increases would, of course, be considerably enhanced had they included the advances of March and April, 1920, noted above. The following is a summary of the Gazette's statement:

There is still a wide diversity between the increases granted to various classes of workers as regards both the actual advance in weekly wages and the percentage increase on prewar rates. In some cases, notably among skilled workmen in industries where the same flat rate advance has been applied to all adult workmen, the increase up to the end of February last was equivalent to only about 100 per cent, or less in some cases, on the prewar rate. On the other hand, in some other cases, particularly among the lower-paid grades in the same industries, the advances are equivalent to as much as 170 or 180 per cent on the prewar rates. While the information in the possession of the department is not sufficiently complete to enable the average percentage increase for all industries and occupations to be calculated exactly, it is estimated, on the basis of the available data, that the average increase in weekly wages up to the end of February, 1920, was about 120 to 130 per cent on the prewar rates. As the length of the working week has been considerably reduced in the same period, the usual range of working hours in industry generally being about 44 to 48 weekly, as compared with 48 to 60 before the war, the percentage increase in hourly rates would be substantially greater.

Miners.

THE Miner's Federation of Great Britain, early in December last, as a preliminary to an appeal to Parliament, undertook a vigorous campaign of propaganda for nationalization of the coal mines, basing their plea on the majority report of the 1919 Sankey Coal Commission, but they did not succeed in winning over public opinion to any great extent, and when on February 11, at the opening of the present session, a Labor member presented the case to Parliament, the result of the "division" of the House was 64 for and 329 against nationalization.

A month later a special trades-union congress rejected by a decisive majority (nearly 4 to 1) a resolution in favor of trade-union action (a general strike) to compel the Government to nationalize the mines. The miners' and engineers' unions made up nine-tenths of the vote in favor of a strike. At this time Mr. Smillie, the miners' president, and for many years their real leader, retired from active leadership on the plea of ill health, leaving Mr. Hodges, secretary of the federation, in aggressive control. The miners having been defeated in their move before Parliament, and not having gained the support of their fellow trade unionists to their proposal to launch a general strike, now presented to the Government a demand for an immediate increase of wages of 3 shillings (73 cents, par) per day for all adult members of the federation, and half that amount for boys under 16

years of age. The Government declined to accede to this demand, but made alternative offers as follows:

1. A flat rate advance of 1s. 6d. (36.5 cents, par) a shift for men and 6d. (12.2 cents, par) for boys; or

2. An increase of 20 per cent on the gross wages, excluding the war bonus and the "Sankey wage" (granted in 1919).

A series of conferences resulted in the Government's amended offer standing as follows:

> An advance shall be granted of 20 per cent on gross earnings (exclusive of war wage and Sankey wage), so, however, that no person of 18 years or upward shall receive a less advance than 2s. [48.7 cents, par] per shift worked or per day worked, no person under 18 years of age but not under 16 years of age a less advance than 1s. [24.3 cents, par] per shift worked or per day worked, and no person under 16 years of age a less advance than 9d. [18.3 cents, par] per shift worked or per day worked. The advance shall apply to all classes of colliery workers employed in coal mines, or at the pithead of coal mines, whose wages have hitherto been regulated by the movement of wages in the coal-mining industry, and shall take effect on and from March 12, 1920.

The federation officials decided to submit this offer to a vote of their members, and on April 16 the result was announced; 442,704 members had voted for acceptance of the Government's offer, while 377,569 had voted for a strike to enforce the original demand. The new terms, therefore, were accepted, and the first payment under them was made at the April 30-May 1 pay day. The advance is retroactive from March 12. The estimated cost of the concession is about £30,000,000 ($145,995,000, par) per annum, and it is probable that an advance in the price of coal will soon be made to meet this cost.

During the discussion of the miners' demand it developed that public opinion quite generally admitted the justice of an increase to miners in view of recent advance made to other workers, noticeably the engineers and railway men, but equally generally considered 3s. (73 cents, par) a day an exorbitant demand.

Statistics relating to miners' wages are conflicting and many of the calculations are made on contentious data. Mr Hodges is reported to have stated that the average wage per person employed in the mining industry in 1914 (including boys) was 6s. 6d. ($1.58, par) per shift. By the operation of the sliding scale which regulated wages according to selling prices of coal and by war wages granted in 1917 and 1918 the average wage per day was about doubled, and in 1919 the Sankey Coal Commission recommendation of 2s. (48.7 cents, par) per day increase was granted. The average number of shifts per week worked by the miners is said to be a little over 5. By using an even 5 the average weekly rates of wages, roughly, would be:

	£	s.	d.	
1914	1	12	6	($7.91, par).
1918	3	5	0	($15.82, par).
1919	3	15	0	($18.25, par).

The miners asked for 3s. (73 cents, par) per shift increase, which would have resulted in an average weekly rate of about £4 10s. ($21.90, par), a figure somewhat higher than the reported average wage of a fitter or turner in the engineering trade, namely, £4 7s. ($21.17, par) a week. It should be remembered, moreover, that in the first instance the average wage included the wages of boys.

The following comparative statements taken from the London Times would indicate that up to the time of this settlement in the matter of weekly advances the miner had fallen behind the engineer, the weekly advances since 1914 being as follows: [2]

Miners:	
Under sliding scale (approximately 3s. a shift)	15s. 0d.
War wages (1s. 6d. a shift in 1917 and 1s. 6d. in 1918, six payments for 5 shifts)	18s. 0d.
Sankey wage (2s. a shift worked)	10s. 0d.
Total	£2 3s. 0d
Engineers:	
Up to April, 1917	7s. 0d.
April, 1917	5s. 0d.
August, 1917	3s. 0d.
December, 1917	5s. 0d.
August, 1918	3s. 6d.
December, 1918	5s. 0d.
December, 1919	5s. 0d.
March, 1920	6s. 0d.
Total	£1 19s. 6d.

In addition, the engineer has a war bonus of 12½ per cent on his total earnings (awarded October, 1917). Before the war the skilled engineer's rate was over 38s. ($9.25, par) per week, hence with the advances noted it is now some 87s. ($21.17, par), or a raise of 49s. ($11.92, par), approximately, against the miners' 43s. ($10.46, par). When the miners presented their demand of 3s. (73 cents, par) per shift to the Government, the prime minister declared that if the demand were conceded it "would knock the whole wage system of the country absolutely endways because it could not possibly end with the miners." The settlement of a guaranteed minimum advance of 2s. (48.7 cents, par) per shift gives the miners a total advance of 53s. ($12.89, par) per week over prewar rates, and the effect upon the engineers who only get an advance of 49s. ($11.92, par) per week, including their recent raise of 6s. ($1.46, par) can not be foretold. In this connection it may be noted that the minority report of the Dockers Court of Inquiry (see MONTHLY LABOR REVIEW for May, 1920, pp. 54–62) quotes this remark of the prime minister in voicing the objection of its signers to the 16s. ($3.89, par) minimum recommended for dockers.

Railwaymen's New Demands.

THE railwaymen's standardization of wages agreement [3] with the Government, embodying a sliding scale arrangement based on the cost of living, which was effected last January, was completed and signed on March 20. But whatever feeling of satisfaction and security may have accrued to the public thereby was of short duration, for on March 25 Mr. J. H. Thomas, the general secretary of the National Union of Railwaymen, wrote to Sir Eric Geddes, minister of transport,

[2] Value of £1 at par, $4.866; 1s., 24.3 cents; 1d., 2 cents.
[3] See MONTHLY LABOR REVIEW, March, 1920, pp. 16–25.

inclosing the following resolution "unanimously passed" by his executive committee:

That this executive committee having taken into consideration the effect of the sliding scale on the wages of our members and recognizing the serious position they are placed in from a wages point of view in relation to other industries, decides immediately to approach the Minister of Transport with the object of reviewing the position.

Following this letter a series of demands and amended demands were made to the Central Wages Board,[3] culminating April 6, when the National Union of Railwaymen applied to the board for an increase of £1 ($4.87, par) a week to all their members covered by the national settlement, with a further explanation the following day that locomotive men, whose wages had been standardized in August, 1919, were included in this demand, and that all previous demands were cancelled.

The Central Wages Board held meetings on April 9 and 13, and, according to the Railway Review of April 16, agreed that in accordance with the sliding scale locomotive men whose wages were fixed in August, 1919, when the cost of living was 115 per cent above normal should receive advances of—

One shilling (24.3 cents, par) a week from November, 1919, when the cost of living was 120 per cent above normal.

A further 1s. a week from December, when the cost of living increase was 125 per cent.

A further 1s. a week from March, 1920, when the cost of living increase was 130 per cent.

It was also agreed that other grades (than locomotive men) under the agreement effected in January should be granted an increase of 1s. a week owing to the increase above normal of 5 per cent in the cost of living, from 125 to 130 per cent.

The consideration of the demand of £1 ($4.87, par) a week increase was postponed until another meeting to be held if possible before the end of the month.

It was further agreed that as a special case the board should meet again when the statistics as to the cost of living on May 1 should be available. This departure from the exact terms of the agreement (a review every three months) was understood to be entirely exceptional and due to the rise in the price of bread (from 9d. to 1s. (18.3 cents to 24.3 cents, par) for a 4-lb. loaf) on April 12 owing to the Government's partial withdrawal of the bread subsidy on April 1. This rise in prices, it was held, is not an ordinary market fluctuation.

The National Wages Board, which is the court of appeal from the decisions of the Central Wages Board, has held a meeting to discuss matters of procedure, and it is probable that the £1 ($4.87, par) demand will be referred to it later on.

Mr. C. T. Cramp, the industrial secretary of the National Union of Railwaymen, in the course of a speech on April 18, as reported in the press, said:

The position of our latest demand for an increase on the standard rate is not generally understood. We made a settlement early this year which standardizes the conditions of railwaymen all over Great Britain, and the case of Ireland is now being considered. Within that settlement was a provision for a sliding scale based on the cost of living, as shown in the figures set out in the Board of Trade Labor Gazette, but that particular question must not be confused with the £1 [$4.87, par] demand. Although the settle-

[3] See MONTHLY LABOR REVIEW, March, 1920, pp. 16-25.

ment is of comparatively recent date, it must be remembered that it was accepted by a delegate meeting under protest, those words being explicitly included in the resolution, and it was only with the idea of obtaining the principle of standardization that they were accepted at all.

Now that we have settled the principle so far as standardization of conditions is concerned, we deem it a right thing to make a demand to raise the standard rate. The acceptance of the Government's offer to the miners gave an increase of 2s. [48.7 cents, par] a day. The recommendation of the industrial court, which inquired into the dockers' conditions, will involve a standard rate of 16s. [$3.89, par] a day. When we made a settlement for locomotive men last August it was made, not merely on the cost of living which then obtained, but was intended to be a just recognition of the skill and responsibility which is possessed by locomotive men, and precisely the same in the other grades, except that we never considered they obtained what they were entitled to.

Now that these changes are taking place in connection with wage rates in other industries it is clearly the duty of railwaymen to see that their rates are also advanced, and that is why the £1 [$4.87, par] increase is asked for. That is why it will be resolutely pushed forward. You can not in these days separate one industry from another in a way that was possible a few years ago. Negotiations become national and public. Parliament is always interested, and when the working classes realize that all questions of wages and hours affecting large industries are matters of national concern, they naturally desire that the standard of life shall, as far as possible, be equalized as between the various sections.

The acceptance of the January agreement "under protest," noted above, may be quoted later on by the miners who accepted the Government's offers on April 16 in accordance with a rather narrow majority vote of their members. In fact evidences of dissatisfaction have already appeared in Wales and other mining sections.

Mr. Cramp's statement that the locomotive men's settlement in August, 1919, was made not merely owing to the cost of living which then obtained but was intended as a recognition of the skill and responsibility of the men, is along the lines followed by the industrial court in establishing the amount of the award to the engineering trades in March. The court expressed the views that while during the exceptional circumstances of the war it was proper to take into account the cost of living as the principal determinant of wages, other considerations now arise. They held that the remuneration of the workpeople should, now that the war is over, depend on the value of the work done, that the value of the work done depends on the state of the market and that the market for engineering products at this time is in a state of exceptional activity, hence they decided upon an advance of 6s. ($1.46, par) a week, one-half to become due on April 1 and one-half on June 1.

London Building Trade Operatives.

A FURTHER hindrance to meeting the very acute housing shortage in London was forecast on April 14, when the London District Council of the National Federation of Building Trade Operatives sent to the London Master Builders' & Allied Industries Association a formal four months' notice to terminate the agreement on working rules which was made between the two bodies last February.

The agreement as it stands provides that subject to certain exceptions the standard rates for skilled building-trade workers shall be (as of May 1) 2s. 0½d. (49.7 cents, par) an hour and for laborers 1s. 9d. (42.6 cents, par). The new rates which if granted would come into force on August 15 are stated to be 3s. (73 cents, par) an hour

and 2s. 9d. (66.9 cents, par) per hour, respectively. As the agreed working hours for builders are 46½ a week in summer and 44 in winter the new demand would amount, if conceded in full, to an addition of over £2 ($9.73, par) a week to the wages of the workers.

A London builder commenting on this demand in a letter to the Times says:

* * * the cost of houses to be erected under the various "housing schemes" in the metropolitan area has been ascertained to be about £1,150 [$5,596.48, par] per house at present prices. Half of this cost may roughly be taken to be for materials and half for labor. With this 50 per cent increase of wages the additional cost per house will be some £280 [$1,362.62, par], making a total of £1,430 [$6,959.10], but as there will doubtless be a sympathetic advance in cost of materials it would not be unreasonable to anticipate that the eventual cost of each house may reach £1,600 [$7,786.40, par]. The county council proposes borrowing the money to pay for these houses at 5¾ per cent. The economic rent, therefore, would seem to work out at £92 $447.72, par] per annum.

Dockers' Agreement.

AT A meeting of the negotiating committees of the National Council of Port Labor Employers and of the National Workers' Federation held in London on April 19, 1920, the port employers agreed to accept "as a whole" the majority report of the Dockers' Court of Inquiry, a summary of which appeared in the May, 1920, issue of the MONTHLY LABOR REVIEW (pp. 54 to 62). The workers had previously accepted the report, and at this meeting it was further agreed that a joint committee of both sides should be set up to work out and settle the following essential details arising out of the report:

1. To whom does the report apply—(a) grades of men and (b) ports.
2. Settlement of differentials.
3. Basis of revision of piecework rates.
4. Safeguards—observance of hours of working and other agreements.

At the close of the conference the following further statement was issued by the committees:

Points of difference arising thereafter on the definition of grades and sections of workers, and details of working and in the actual carrying out of the agreement to be settled by submission to an independent arbitrator, agreed upon between the parties, his decision to be final, and accepted by both sides, or by some other effective method to be mutually agreed upon, the object in view being the stoppage of sectional strikes.

The Times (London) of April 20 comments as follows:

Stress should be laid on the fact that the employers have accepted the majority report "as a whole." The dockers' representatives signed it, and the Transport Workers' Federation accepted it "as a whole." The point is important, for the report was as much a report on output as on wages. It recommended the establishment of a national minimum wage of 16s. [$3.89, par] a day, but it made this recommendation "on the footing that the hopes held out on behalf of the men of increased output shall not be frustrated." One of the questions referred to the new joint committee is "safeguards—observance of hours of working and other agreements." It would be invidious, in view of the admirable temper which has so far prevailed on both sides, to attempt to prejudge the decisions of the joint committee on this question. But the dependence of the new minimum wage on good timekeeping and conscientious work should be kept in mind at every stage in the negotiation of what has been called the "dockers' charter."

Greater Output in Industry.

THE British Government has set up a committee with the following terms of reference: "To consider and advise as to the best means of securing the greatest possible production consistent with the permanent well-being of industry and of the employers and the workpeople engaged therein." The committee consists of an independent chairman, two employers, two labor representatives, and two Government representatives, all of these being "permanent," and in addition there will be two representatives appointed by the employers and two by the workpeople to represent any particular trade which may be under consideration by the committee. The trade representatives will leave the committee when the inquiry has been completed so far as regards their particular trade and representatives of other trades will take their places.

The ministry of labor after consultation with the National Confederation of Employers' Organizations and with the parliamentary committee of the Trades-Union Congress appointed the "permanent" members of the committee, and is now in communication with the National Industrial Council for the Building Trade, which is the first trade to which it is proposed to give consideration regarding the appointment of "temporary" representatives to act during the time of such consideration.

The chairman of the committee is Sir Stephenson Kent, K. C. B., director general of munitions labor supply, 1916–1918, and controller general of civil demobilization and resettlement, 1918–19, who came to America on a Government mission in 1917.

MINIMUM WAGE.

Minimum Wages for Hotel and Restaurant Workers.

District of Columbia.

AN ACCOUNT of the conference called by the Minimum Wage Board of the District of Columbia to meet on February 3, 1920, for the purpose of recommending a minimum wage for women employees in hotels and restaurants, apartment houses, clubs, and hospitals, was given in the March issue of the MONTHLY LABOR REVIEW (pp. 132–136). Subsequently the board issued an order (M. W. B. Order No. 4), dated March 26, effective May 26, fixing the amount recommended by the conference, namely $16.50 per week, as the minimum wage for the workers affected. The text of the order is as follows:

The Minimum Wage Board of the District of Columbia does hereby order that—

1. No person, firm, association, or corporation shall employ a woman or minor girl in any hotel, lodging house, apartment house, club, restaurant, cafeteria, or other place where food is sold to be consumed on the premises or in any hospital, at a rate of wages of less than 34½ cents per hour, $16.50 per week, or $71.50 per month. This shall not be construed to include nurses in training.

2. When bona fide meals are furnished by the employer to any woman or minor girl employed in the establishments named in section 1 of this order as part payment of the wages of such employee, not more than 30 cents per meal may be deducted by such employer from the weekly wage of such employee. A record shall be kept of the number of meals furnished each woman and minor girl per week and of the deductions made from the weekly wage for the same; otherwise the full minimum wage rate shall be paid in cash.

3. When lodging is furnished by the employer to any woman or minor girl employed in the establishments named in section 1 of this order as part payment of the wages of such employee not more than $2 per week shall be deducted by such employer from the weekly wage of such employee.

4. Tips and gratuities shall not be construed as part of the legal minimum wage.

This order shall become effective sixty (60) days from date hereof.

Saskatchewan.

THE Minimum Wage Board of Saskatchewan has issued as its fourth order regulations governing female employees in hotels, and refreshment rooms.[1] The order fixes the maximum hours of labor at 48 per week unless by special permission in writing. No work period is to end between 12 midnight and 7 a. m. The minimum wage for experienced workers is $14 per week, a three months' learning period to be permitted at a rate not under $12 per week. No female under 16 is to be employed, nor any female under 18 to work after 8 p. m. Records of names, hours worked, and wages earned are to be kept. Meals are to be reckoned at not more than $5.25 per week for 21 meals, and where lodging is furnished, $2.50 is the maximum charge for full seven days. If aprons or caps are required, they must be furnished, laundered, and kept in repair by the employer. The customary regulations as to cleanliness, drinking water, lighting, ventilation, toilet rooms, wash basins, etc., are embodied in the order.

[1] Earlier orders were noted in the MONTHLY LABOR REVIEW for December, 1919, p. 266.

COOPERATION AND PROFIT SHARING.

Aims and Possibilities of the Consumers' Cooperative Movement.

By FLORENCE E. PARKER.

THE consumers' cooperative movement is one of vast possibilities—possibilities, however, which have as yet scarcely begun to be realized. The movement is growing rapidly, but it will reach its greatest opportunity for development only when it controls the sources of its supplies. Under the present system of distribution, the retail cooperative store is absolutely dependent upon the wholesalers, jobbers, manufacturers, and producers, all operating on the profit basis to which the cooperative movement is opposed. Cooperative leaders have long understood this difficult position and have looked forward to the cooperative undertaking by the consumers, step by step, of the successive stages—wholesaling, manufacture, transportation—backward toward and including the primary source of supply, the land. They hope for the time when cooperation will be substituted for competition and the needs of man, economic and social, will be supplied, not for profit but for use, by the organized consumer. This is an ambitious program, but the program of the movement, though not often formulated, has always been ambitious. The original Rochdale pioneers with their tiny shop in Toad Lane aimed to do no less than "proceed to arrange the powers of production, distribution, education, and government; or, in other words, to establish a self-supporting home colony of united interests."

Because of its inherent possibilities, and because of the fact that it is being recognized more and more as a means of relief from our present industrial and economic ills, the cooperative movement deserves consideration. Under these circumstances it becomes important to know whether, and if so in what way, the cooperative is an improvement on the competitive system; whether the movement is capable of performing all those social and industrial functions that it is its avowed aim to undertake; what is the position of labor in the system; and what the universal application of the system would involve. It is impossible, of course, to review the subject exhaustively in a short article, but an attempt is made here to touch briefly upon the important points.

Democratic Aspect of Cooperation.

THE first claim to favorable consideration made by the cooperative movement lies in the fact that cooperation is the embodiment of industrial democracy. Membership is voluntary and open to all. Shares are of low denomination and may usually

be paid for in installments. At meetings each member has one vote and no more, regardless of the amount of stock held. In order to insure comparative equality in the financial status of members, the number of shares that may be held by any one member is limited. Capital receives interest at no more than a legal rate, it being the cooperator's idea that the owner of capital should receive a fair price for the use of his money, but no more than a fair price. The possessor of a great deal of money therefore has no more power in the affairs of the society and no higher status than his poorer fellow member. In the cooperative movement all are on the same footing. It has been said that the motive power of the movement is the man and not his money, and this principle is logically extended to every part of the movement, federations as well as retail societies. No financial group can obtain a controlling interest in the cooperative society; and a society can increase its power over the policy and operations of the cooperative wholesale society only by increasing its membership. On the other hand, all the economy which results from the combination of a large number of industrial operations under one management is obtained under the cooperative system through the method of federating societies for the purposes of wholesale trading and manufacture.

Cooperative v. Competitive System.

THE distinguishing feature of the cooperative system is that it exists for the common good. All land or buildings acquired become the common property of all the members. Every economy in manufacture and distribution, and every advance in efficiency or improvement in machinery benefits every member, instead of going to swell the profits of some one person.

It is obvious that the attainment of the aims of the movement on a universal scale means a readjustment of our entire economic system. However, it will probably be admitted that there is room for improvement in present conditions, particularly those under which distribution is carried on. Certain abuses have grown up under the present system which cooperation would correct.

Our present distributive system has become extremely complex, due partly to subdivision of effort. This subdivision has been carried to such lengths that even the vegetables bought by the housewife may have passed through the hands of as many as five different middlemen after leaving the farmer.[1] Each of these middlemen adds to the cost price a further charge to cover his expense of handling and a profit for himself, and in some cases to cover expense incurred by submitting the article to certain operations, tending to enhance its attractiveness but adding nothing to its value. It does not necessarily follow of course that the elimination of a middleman means a reduction of cost price to the consumer. It may often be true that subdivision makes for a greater real economy than would a system of more direct trading between the farmer and housewife. Nevertheless, distinction should be made between the subdivision that means a real service performed and that which simply adds to the cost. One

[1] U. S. Department of Agriculture, Bul. No. 267: Methods of wholesale distribution of fruit on large markets, 1915, p. 22.

practice existing under the present system, which is utterly to be condemned, is that of "resales within the trade" for purely speculative purposes. Cooperation would reduce to a minimum the intermediary agencies between producer and consumer by eliminating all unnecessary middlemen.

Probably one of the greatest sources of waste and one which burdens the consumer unnecessarily is the great duplication of retail selling machinery. The committee on markets, prices, and costs of the New York State Food Investigating Commission found that New York City had one store to about every 250 persons.[2] The existence of a dozen little shops where three would suffice to supply the needs of the community means, of course, that the price to the consumer must be large enough to cover the overhead expenses and profit of the superfluous nine. The cooperative system would eliminate this multiplicity. English statistics show that while the movement has grown, the number of societies tends to decrease slightly from year to year, due to the amalgamation of societies to avoid overlapping of the field of activities.

Under the competitive system, the consumer's wants are supplied by dealers whose interests are directly opposed to those of the consumer, whose motive is profit, and who have no direct interest in keeping the quality of the article up or in keeping the price down, so long as they make a profit.

Under that system the dealer or manufacturer does not confine himself to the supplying of articles which the consumer needs and wants. By campaigns of advertising he familiarizes the public with his commodity and creates a desire often where there is no real need for the article. The advertising cost must be covered by the ultimate price to the purchaser. At present also the purchaser has no assurance that the article he buys is of the quality he supposes it to be.

Under the cooperative system there is no advertising, and since no profit is involved, there is no incentive and consequently no attempt to induce the customer to purchase anything he does not want. And he has the assurance of quality in his purchase, since no one has any interest in deceiving him on this point. Only those articles are manufactured which members ask for. Each member, through his vote, can express his preference or disapproval of any articles furnished.

To the cooperator the motive underlying the present distributive system—profit—is wrong. He believes that the remedy is the management of the processes of distribution, manufacture, and production by the consumer, in the interests of the consumer. Under these conditions, the motive of gain being absent, all of the evils that now face the consumer—high prices (in the sense of being more than the article is worth), poor quality, adulteration, short weight, and waste in distribution—would disappear.

Production by the Consumer.

THAT it is possible for the consumers' cooperative movement to control all the stages involved in the production of the article handled by the cooperative store and do it successfully has been

[2] New York State Food Investigating Commission, Report of committee on markets, prices, and costs (Aug. 1, 1912), p. 7.

demonstrated in England. There the Cooperative Wholesale Society manufactures for the retail store such things as textiles, clothing, boots and shoes, cutlery, ironware, soap, tobacco, jams, pickles, vinegar, lard, bacon, cocoa, paints, and brushes. The wheat that goes into the manufacture of the cooperative flour is largely grown on the wholesale society's own land in Canada, and is transported to England in the society's own ships. The society owns and works about 30,000 acres of land in England, and its policy is said to be to buy up every acre of tillable land offered for sale in England.

The situation in England is described thus:

> The cooperative consumer of jam or tea or boots is using what was produced in a factory owned and controlled by himself (and other cooperators) and distributed by his own agents. There is no manufacturer, merchant, commercial traveler, or dealer beyond himself and his own employees. There is no one buying at a low price to sell at a higher one, as is seen when the transactions from manufacturer to retail purchaser are carefully analyzed. True, there may be a "surplus" between the charge made by the manufacturing society and its total expenses of management; if so, this is returned to the purchaser. Hence, "profits as understood by the ordinary economist have no existence in the cooperative movement." (Catherine Webb: Industrial Cooperation, pp. 39 and 40.)

That cooperative manufacture even in England covers only a limited field is evident. The wholesale society manufactures only articles for which there is a demand from its members and these it manufactures only for its members, not for the open market. In other words it manufactures a limited number of articles, for a known market. The fields of agriculture and the broader industries, such as mining, construction, and transportation have hardly been touched upon. Whether the movement could successfully be applied to these fields is a matter for conjecture. It is argued, however, that if the field of cooperative effort has hitherto been limited it is because the membership of the movement has been limited. Its members are predominantly of the working classes, and it must therefore supply those things which the working classes demand. The contention is that if within the movement were included all classes of society the movement would be compelled to undertake the supply of the wants of all classes whatever those wants might be.

Position of Labor Under Cooperation.

IT IS admitted that one of the most important questions to-day is that of the adjustment of the conflicting interests of employer and employee. Anything that will accomplish this is deserving of the most thoughtful consideration. What cooperation offers in this respect can best be shown by the English experience.

With the growth of the movement, members of the cooperative societies, themselves, in most cases, employees, have in their capacity of cooperators, become large employers of labor—in 1918 the societies belonging to the English Cooperative Union employed a total of 164,383 persons. Thus has developed a most interesting situation which one writer has described as follows:

> Cooperators have been faced with the labor problem in a double position. In their own lives, and in the factories and shops in which they work, in their traditions and their ideals, they belong to labor, and take naturally the standpoint of the employed and wage earner; in the cooperative society and factory, as cooperators,

they have been forced to look at the same problems through the eyes of the employer and wage payer. (Leonard Woolf: Cooperation and the Future of Industry, p. 65.)

The same writer, though admitting that there may still be cooperative factories in England in which "the wages paid are disgracefully low, the hours long, and the general conditions unsatisfactory," nevertheless declares that—

If you take the movement as a whole, there can not be the slightest doubt that the level of conditions of employment within it is higher than it is outside. All over the country cooperative societies will be found to be leading the way in the matter of fair wages and short hours, and this has been true of the movement from the earliest time. (Leonard Woolf: Cooperation and the Future of Industry, p. 66.)

Furthermore it is stated that the impulse toward the improvement of the conditions of the employee in the movement has come from within and not from without the movement.

Not only has the trade-union been recognized by the cooperative movement as the proper spokesman and champion of the employees but many of the societies require their employees to be trade-unionists. The position taken by the trade-unionists toward their cooperative employer is shown by the following:

An ardent trade-unionist, an employee of a cooperative society, once said to the writer: "Of course there's a difference between the relations of an employee to a capitalist employer and those of an employee to a cooperative employer. The object of the first is to smash his employer, for the only way to argue with capitalism is to knock it on the head. But practically no cooperative employee wants to smash cooperation; it's almost as much in the interests of the employee to spread cooperation as it is in the interests of the cooperator." These are strong words, but they show that the cooperative commonwealth was not altogether a dream. The difference in the relations, noticed by the trade-unionist, is due solely to the fact that the cooperative employee feels that, in a broad sense, his interests as a worker will be protected by the workers who are members of the society. That is the practical value of the democratic constitution which we examined in the last chapter. The whole of industry is very far from being cooperative; it will be a long time before the whole community are cooperators; and many cooperative employees are themselves not members of the movement. But the time has already come when the worker can at least feel that his interests are represented by a large body of workers in the membership of every society. There is in fact already to some extent a balance of power in the cooperative control of industry. That is why while the relations of labor to capital inevitably result in "class warfare," class warfare between cooperators and labor is inconceivable. (Leonard Woolf: Cooperation and the Future of Industry, p. 75.)

Cooperation as a Universal System.

AS TO whether cooperation will ever become universal, students of the subject differ. Theoretically, there seems to be no reason why the movement should not modify its structure and organization so as to include within its limits all forms of activity. However, since affiliation with the movement is entirely a voluntary matter it is doubtful if cooperation would ever become absolutely universal. The scope and limitations of cooperation have been well summed up in a recent book[3] on the subject:

"The basis of the membership is a human being, pure and simple. Potentially, membership includes all society—it is all-inclusive. Consumers' cooperation is essentially a social movement, for the interests it represents permeate all society." The author of this book thinks, however, that cooperation being voluntary with the

[3] Albert Sonnichsen: Consumers' Cooperation, New York, MacMillan Co., 1919.

individual, will never wholly supplant private enterprise. While theoretically it would accomplish the complete socialization of industry, there would always be an opportunity for "the private capitalist who could, or thought he could, carry on business in competition with the socialized industry," for the inventor, and for the man with originality and individuality in creative work. Cooperation "is based on the happiness, the free will, of the individual. It desires to include no one it can not benefit. When cooperation has spread just so far as it can benefit human beings it will stop, and be perfectly content to stop."

Russian Cooperative Movement.

By A. J. ZELENKO.

STATEMENTS concerning Russia are numerous and conflicting. Questions as to what statements are true are difficult to answer. Many of the things that are being said are, to a certain extent, true; in some parts of Russia these things may have happened, but one can not definitely credit them as applying to Russia in general. Those who travel through a country are impressed only by the things which they have come to observe, so that a particular occurrence may often present various aspects, according to the viewpoint of the person observing it. Such observations are, of necessity, only surface observations. The undercurrents in the life of a country present an entirely different aspect.

Russia is about two and a half times as large as the United States, and fully 93 per cent of its population is engaged in agricultural pursuits, leaving only about 7 per cent for the urban population. In Russia the people live in old settlers' communities. The farms are not scattered all over the country at long range from one another. The people there were naturally drawn together and they settled in groups, mainly for self-protection, because the severe winters, the vast stretches of waste country, danger of wild animals, and attack from Mongolian tribes in the olden times, were all elements to bring the people together.

Another fact to be taken into consideration is that throughout that vast Russian country the means of transportation has always been very poor, and the people of each village have been compelled to fill their own needs—supply their own food, weave and make their own clothing, and create almost every article necessary for their own daily life and work. They did not feel so much the need of the things produced by the city, because they were situated so far away from the manufacturing centers. Even now there are small communities in Siberia whose inhabitants can not reach the larger settlements without traveling for from two to six days at a time, and so these communities live just for themselves, producing everything to meet their daily wants. And the result is that approximately 37 per cent of all material used is made by the artisans working throughout the rural portions of the country.

From one point of view this communal self-preservation has been beneficial to Russia. The merchant class developed only weakly, and big industry has not been well organized. Private capital is not strong in Russia as it is in Europe where a greater percentage of the people live in large communities. In olden times, when the peasants needed wood they would meet, organize into a small group called an artel, and go together into the forests to cut it. Each artel would elect its own foreman to take charge of the work, and to divide the proceeds among the members according to their respective labors. In a similar way the fishermen along the seacoasts established artel fisheries, the farmers brought their dairy products together and founded artel creameries, and the men of the northern villages each year formed artels for their trip to the south to help in the reaping of the harvests. Thus it was in many other lines of the peasants' agricultural and industrial activity, and whenever a new enterprise was undertaken the spirit of cooperation was always present. And so by looking back over a thousand years it is found that cooperatives, in primitive form, have always existed in Russia.

In Russia the old feudal system left all power in the hands of the nobility, which represented the interests of the large landowners, and private commercial enterprise was so little developed that there was not much competition to be met in the organization of primitive cooperative undertakings. When in 1863 the peasants received their freedom and were no longer the slaves of the nobility, cooperative societies—based on the old natural group or artel enterprises, but now backed by modern methods and the possibility of establishing duly registered societies—sprang up and began to grow like mushrooms. In 1865 the first cooperative society, with written resolutions and by-laws, was organized; in 1874 there were 353 such societies; in 1917 the number had grown to 59,753; and in 1918 there were about 50,000 individual societies. In that same year there were twenty million members of the cooperative movement, the majority of whom were householders, and, with their families, brought the total number of cooperators in Russia to about one hundred millions. Their power is shown by the fact that after the great war, and during a time of civil war and a great lack in the means of transportation, the cooperative societies in 1918 had a turnover of 10,000,000,000 rubles ($5,150,000,000, par), which surely demonstrates their ability to buy and dispose of merchandise among the members of the cooperative societies even during that most trying period in the history of Russia.

Types of Russian Cooperatives.

THERE are four types of cooperative enterprises in Russia: The consumers', producers', savings or credit, and insurance cooperative societies.

Consumers' Societies.

Usually the consumers' cooperative society is undertaken because of the villagers' dissatisfaction over the prices and quality of the goods furnished by the village grocer. Perhaps they know also that the people of the adjoining village have a cooperative store and are already receiving dividends. The villagers apply to the regional

union, an organizer is sent to their village, statutes are discussed, by-laws approved, and a new society is born.

Sometimes societies have failed because they did not have money enough to compete with small private enterprises in the villages, and did not wish to join in the union of societies. Sometimes, too, they selected some dishonest salesman who took advantage of the people. When these societies came to realize that they really needed the sustaining aid of other societies, and that they would benefit by mutual help, they joined the regional unions mentioned before, where the representatives of the respective societies in a certain region or county came together for buying. Each of these regional unions may be composed of 10, 20, or even 1000 societies. There has never been a failure of any such union. The shares belong to the societies, but not to individual members, and are taken in proportion to the membership of the retail societies. Altogether there are about 500 regional unions, and some of them, like the Union of Siberian Cooperative Unions ("Zakoopsbyt"), the Petrograd Wholesale, the Don-Kubon-Terek Union, and others, are very powerful societies, which build and conduct their own factories. They manufacture soap from fats, they make butter and cheese in large dairies, conduct shoe and tobacco factories, and sell these products back to their own members, the small village societies. Besides this work, they each year set aside enough money from the profits to maintain a corps of instructors and experts in many fields of educational work for the benefit of their members.

The regional consumers' unions merge again into a central wholesale union in Moscow, called the All-Russian Central Union of Consumers' Societies, which was organized in 1898. In 1918 its membership consisted of 500 federations, comprising 40,000 local societies and about 12,000,000 individual members. During that year its capital amounted to 100,000,000 rubles ($51,500,000, par), and its turnover was 2,000,000,000 rubles ($1,030,000,000, par). This union operates flour mills, candy, shoe, tobacco, soap, sirup, chemical and match factories, refrigerator plants, and fisheries, valued at 800,000,000 rubles ($412,000,000, par).

Producers' Societies.

Since 93 per cent of the population is rural, it will be easily understood that many types of producers' societies were formed for the purpose of disposing of the respective yield of each agricultural activity. Thus there are producers' societies for the marketing of eggs, butter, hemp, flax, timber, furs, fish, etc.

The next step is the organization of a group of societies into a union. According to their various specialties, the producers' unions are also organized into central bodies such as the Central Egg, Union of Siberian Creamery Associations, Central Hemp, Central Flax, Central Lumber, Central Truck Gardeners, Central Potato Starch Producers, etc.

Even before the beginning of the Great War, about 60 per cent of the Russian butter sold abroad belonged to the cooperative unions; about 40 per cent of all the eggs were marketed by cooperative societies; and about 75 per cent of all the flax, as well as about 60 per cent of the hemp, was grown by cooperators.

The latest consolidation is that of the various small artisans in the rural districts, and even in the cities, into artels of shoemakers, makers of clayware, toy makers, felt makers, hardware producers, and other small craftsmen, who have organized their own respective producers' societies, and now combine in the central artisan union called "Kustar Union." Since the Russian cooperative credit unions came to the assistance of the artisans, the latter have been greatly helped in their competition with private concerns, for they can obtain the necessary credit from the bank to purchase raw materials and can commission the bank to sell the finished products, receiving in advance about 80 per cent of the final selling price.

In Leipzig, Germany, is the world-renowned fair of toys, which are later sold not only in Germany, but to England, America, Africa, and Australia. Even before the war the Russian artisan unions sent representatives there and sold millions of marks' worth of toys.

What has been the result of this cooperative plan of work? When the Russian industries stopped because of the lack of materials, transportation and other difficulties, the small artisan increased his production to meet the necessities of his country. We hear that big industries have been destroyed, but the country is still being supplied—perhaps it is being supplied insufficiently, especially in so far as manufactured goods are concerned, but nevertheless the people are being furnished with at least the bare necessities—and the reason is that the small artisans have developed and increased to such an extent that they are able to help themselves and their countrymen survive until common enterprise and mutual help enable the Russian people to restore their means of production.

Credit Societies.

Banking facilities not being well developed in Russia, the cooperatives established credit societies in many villages in order that the members might deposit their savings, or obtain credit when necessary. For instance, if a farmer wishes to make improvements on his homestead, he may go to his credit society and receive the required money on credit. But not only do the individual cooperators need the credit extended by the credit or savings societies; the societies themselves, as well as the large wholesale unions, require money with which to carry on their immense business transactions. They borrow money not only from the regional credit unions, into which the small local credit societies are combined, but also from the central cooperative bank in Moscow, called the Moscow People's Bank. The cooperative unions and societies own all the shares of this bank, and elect the members of the board of directors to control the management of the business. The bank is the clearing house for all kinds of large cooperative enterprises; it finances the consumers' and producers' unions, and also helps in the transactions of the central producers' unions, by buying for them at wholesale prices all needed materials in the line of agricultural machinery and supplies. Founded in 1912, the bank in 1919 had a capital of 100,000,000 rubles ($51,500,000, par), and a turnover of 5,823,578,394 rubles ($2,999,142,873, par). Recently a special union called "Selskosoius," has been organized by the unions interested in buying agricultural im-

plements, and this new union now works independently of the Moscow People's Bank.

Insurance Societies.

Cooperative insurance societies came into existence during the war. Here in America insurance is generally carried on by private companies, but in Russia insurance has already been managed successfully on a large scale by cooperative societies.

Extent and General Aspects of the Movement.

ALTOGETHER there are no less than 50,000 small societies spread over the entire country. In almost every large village one will find a small retail store, very often a farmers' or small producers' society, and a savings bank or credit society. Each of these four has its own separate constitution and its own board of directors, but some of the members are workers and members of consumers' as well as producers' and credit societies.

To correlate, harmonize, and defend the interests of the cooperatives on questions of national importance, there is in Moscow the All-Russian Council of Cooperative Conventions, where all branches of cooperative activity are represented. This council has only consultative and advisory power, as all economic transactions are carried on directly through the respective unions.

Cooperative activity has also found a special field among the industrial workers and various State employees, such as the postal and railroad officials and municipal clerks. Here the consumers' societies established their foothold. Many years ago the proprietors of the factories started stores from which their workers might buy supplies. In many instances these stores were carried on conscientiously and honestly, but in others the workers were forced to pay unfair prices, as their salaries were paid in checks which had to be presented at the stores for exchange in merchandise and groceries. Gradually the more progressive employers introduced a system of cooperative stores, in which part of the capital was supplied by the employer himself, and the rest by shares sold to the employees. Such stores were known as "dependent cooperative stores." But the workers desired to reorganize and to become independent. A campaign was launched, many stores were bought out, especially during the past six or seven years, and as a result the dependent store has gone into the archives of history. Labor cooperation is conspicuous because of its generous grants of profit money for the educational and social uplift of the members and their families. The same should be said of State and municipal employees' cooperative societies.

Though the city dweller was last to enter the movement, his delay in joining the movement is natural. The city is individualistic, its population is fluctuating, and the interests which its people have in common are more often intellectual, esthetic and political than economic. But the Great War, revolution, and civil strife, followed by economic disaster and high living costs have shown them more clearly the urgent need of economic cooperation, with the result that the cooperative movement has spread rapidly in the cities, where members are now counted in tens of thousands. This common

economic enterprise has brought the members and their families in closer contact with one another, and thus has fostered the organization of many social enterprises for the benefit of the various members of the families, such as the establishment of kindergartens, playgrounds, libraries, summer camps, cooperative vegetable gardens, and many other kinds of recreation.

The proportionate growth of cooperation among the various classes of society is shown by the fact that 86 per cent of the peasantry, 7 per cent of the industrial workers or laborers, and 7 per cent of the middle class are engaged in cooperative enterprises.

Such has been the activity of the Russian cooperators that the movement has outgrown national lines. Even before the war the largest unions established headquarters in other countries. The Moscow People's Bank, the Union of Siberian Creamery Associations, the All-Russian Central Union of Consumers' Societies, and the Union of Siberian Cooperative Unions ("Zakoopsbyt"), opened foreign offices. Offices are now maintained in London, New York, Paris, Constantinople, Stockholm, Christiania, Copenhagen, Helsingfors, Warsaw, Berlin, Marseille, Harbin, Shanghai, Kobe, and Yokohama, as well as at all the principal ports of Russia, such as Archangel, Murmursk, Vladivostock, Novorossysk, Rostov-on-the-Don, Odessa, and Petrograd. In addition to the above the All-Russian Central Union of Consumers' Societies maintains branches in Northern Persia and throughout Mongolia.

Millions of dollars' worth of goods have been bought and sold in these various countries, by working in conjunction with the English and other national wholesale societies, in the hope that the cooperatives may protect the economic interests of the Russian people abroad as well as they have protected them at home. Rice is bought in China, tea in India, cocoa in America and Java, and machinery in America and England, at wholesale prices, and thus large amounts of money are saved every year.

Educational and Social Work of the Cooperatives.

THE educational activities of the cooperatives may be divided as follows:

1. Extension courses for the young people in the country.
2. Summer courses to prepare instructors and lecturers.
3. Short winter courses for village bookkeepers.
4. Regular university courses for higher cooperative training.
5. Peasant universities. There are already five or six peasant universities established throughout the country along the lines of the Danish University which peasants may attend during the winter months, to receive instruction in agriculture, farming, home economics, and civics. Many groups are sent to the educational department of the central unions.
6. Cooperative elementary and high schools. There is a new movement on foot to establish new types of elementary and high schools for children, by employing only methods based upon cooperative principles.

There are no less than 500 wholesale consumers', producers', and credit unions in Russia, and each has its staff of traveling lecturers,

bookkeepers, managers, and experts in agricultural and various kinds of local industries, who are constantly visiting the different societies in their districts. Altogether there are at least 3,000 such instructors engaged in this work. These instructors are also trying to introduce more intensive social and educational training among their groups. If a local society decides to start a village library, the members ask the district wholesale union to send the material, and the latter in turn applies to the central wholesale union which prints its own books, or buys whole editions direct from private firms. Not less than a hundred thousand books and ten million pamphlets have been printed during this past year to be resold in the small cooperative societies.

The instructors try to satisfy the needs of all generations. The older folk gain information regarding agriculture, bootmaking, bee culture, and the lumber industry. The young people are supplied with material for their literary, social, and theatrical clubs. The unions sometimes keep special instructors who go into the villages to show the people how to start their dramatic ventures. The wholesale center keeps on hand a large stock of theatrical paraphernalia, ranging from scenery and costumes to wigs and other make-up, which it sells or rents at a nominal charge. It is an exciting event in the life of a young peasant boy to find himself transformed to represent a foreign courtier, an old Russian knight or boyar, a banker, or a merchant. For the most part the plays produced are of very good social and cultural value, and with the aid of the instructors the best classical works are introduced. The older folk often protest against all these "extravagances" brought by the younger generation, but are finally persuaded that theatrical performances were used by the church in medieval times, and are slowly being won over. Very good guidebooks for the people's theaters are written by the cooperative instructors, and the best dramas and comedies are published in very inexpensive form for from 5 to 15 cents apiece.

The cooperatives have opened many tea houses throughout Russia, and take great care that these are made real social centers. They are ever watchful to see that these places are kept clean and the atmosphere made attractive and congenial. In these houses daily newspapers are kept, meetings called, and now and then a lecture arranged. When the war broke out and the Russian Central Government prohibited the sale of liquors, many houses run by the liquor dealers were taken over by the cooperatives, and thus the problem of transforming saloons into clubhouses was practically solved in Russia as long as five years ago. About three or four thousand tea houses are already in operation there.

A typical arrangement for a cooperative commonwealth center consists of a store which is connected with the tea house, a room for the village bank where the local credit society has its office, another little room where the board may hold its meetings, and very often a storehouse for agricultural implements. The All-Russian Central Union of Consumers' Societies has also published a book which has already passed its fourth edition, entitled "How to Build and Control People's Houses."

When a traveling lecturer or instructor arrives at the village with his lantern and pictures, the boys of the village rush through the

streets, excitedly announcing at every house, "The city uncle has arrived, and will show us some new pictures." Gradually the schoolhouse, the social center, or the library building, as the case may be is filled to overflowing. After crossing himself upon entering, every, one greets his neighbor with a hearty "Good evening." Children are everywhere, and those who have been unable to crowd inside the building press their little noses against the windowpanes in order to see the pictures. The instructor lectures while showing his pictures of agricultural or geographical interests, light comedy, or the activities and progress of other cooperatives which the people of this village have not yet attained, and thus a feeling of competition is aroused in the community. If the lecturer knows the people, and can express himself to them in their own simple village language, he is able to grasp the relative strength of the conservative and progressive elements of the village cooperative society, and understand just how much progress he can make at one time, and what he will have to emphasize most during his next visit. Thus the contact between the officers and the privates of this big cooperative army is formed. New leaders are constantly being developed, and faithfulness to the cause in times of stress or failure is inspired in the young workers.

Conclusion.

AT THE crucial point in Russian history, when everything has been in an unsettled condition, the cooperative unions have stood firmly. In 1918, when practically the entire country was divided into five separate parts, the cooperatives were still able to carry on their work and bought, sold, and distributed among their members about 10,000,000,000 rubles' worth of goods ($5,150,000,000, par). This shows that they have worked in spite of political separations, for the cooperative societies are economic organizations endeavoring to remain apart from political matters.

Every citizen wishing to become a member of a society may do so, for none will ask his political opinion or religious belief; thus there are both conservatives and radicals in the societies. It is the right and duty of every citizen to express his political convictions, but it is done in political, rather than in economic, groups. It is, of course, natural that the cooperators from the industrial centers should be more radical than the cooperators from the agricultural communities, and that a member of the credit union who has been able to save a small amount from the proceeds of his toil is more conservative than the man who has only one capital—the strength of his hands.

The cooperative movement is a product of historical conditions, geographical situations, and cultural background. It can develop only along its organic lines and will adapt itself to the new conditions of life in accordance with its main natural requirements—the freedom to build and to rebuild social groups for the benefit of each member. The cooperative idea is not hostile to the political systems as long as those systems do not interfere with the principle "for the people, by the people, through the people." What the cooperatives need is the right to show initiative, and to have freedom and power vested in the social groups to organize common-welfare enterprises in which everyone is free to join if he so desires. The Russian cooperatives

firmly believe that such freedom within the State will be reached. And, as the State requires the services of the cooperatives for urgent national needs, the cooperatives have always considered it their duty to help the State and will continue always to do it.

Progress of Cooperation in Various Countries.[1]

Denmark.[2]

DURING 1917–18 the cooperative movement in Denmark was greatly affected by the continued reduction in imports, the shortage of raw material, and difficulties in transportation. The adverse effect of these conditions on the Cooperative Wholesale Society is shown by the fact that the amount of business done by it decreased from 81,581,786 kroner ($21,863,917, par) in 1917 to 74,043,050 kroner ($19,843,537, par) in 1918. The wholesale society manufactures hosiery, ready-made clothing, bicycles, cement, rope, soap, cigars, tobacco, marmalade, candy, wines, tea, spices, and margarine. The productive departments were particularly affected by the conditions mentioned, the value of their output decreasing from 17,668,395 kroner ($4,735,130, par) in 1916 to 16,377,979 kroner ($4,389,298, par) in 1917 and to 9,598,531 kroner ($2,572,406, par), in 1918.

The following table shows the activities of the Danish Cooperative Wholesale Society during the period 1914 to 1918:

OPERATIONS OF THE DANISH COOPERATIVE WHOLESALE SOCIETY, 1914 TO 1918.

[1 krone at par=26.8 cents.]

Year.	Number of affiliated societies.	Number of members.	Amount of business.
			Kroner.
1914	1,407	219,492	69,588,824
1915	1,488	232,128	71,458,307
1916	1,537	239,772	84,510,390
1917	1,574	245,544	81,581,786
1918	1,604	250,224	74,043,050

France.[3]

IT IS stated that the French cooperative societies have been very active during the war. A number of the activities have been carried on in conjunction with the various public administrative

[1] The data on which this article is based were obtained from the International Cooperative Bulletin, issues of August and September, 1918, April, August-September, October, and November, 1919, and February and March, 1920; International Review of Agricultural Economics (Rome), August-September-October, 1919; People's Yearbook, 1920; Political Science Quarterly, March, 1920; Jahrbuch des Zentralverbandes deutscher Konsumvereine, 17 Jahrgang, Hamburg, 1919; Report of the agricultural branch of Bengal (India) Revenue Department on the Working of the Cooperative Societies in Bengal, 1918-19; The Cooperative Movement in India, by P. Mukherji; and Special Report No. 13 (as yet unpublished) to the Bureau of Foreign and Domestic Commerce of the U. S. Department of Commerce on the Cooperative Movement in the Netherlands.

[2] A short general account of the cooperative movement in Denmark was given in the MONTHLY LABOR REVIEW for March, 1919, p. 143.

[3] Short accounts of the cooperative movement in France have appeared in the MONTHLY LABOR REVIEW for March, 1919 (p. 142), and October, 1919 (p. 178).

bodies, municipalities and State Departments. In August, 1915, the cooperative societies offered to the Government their services in the distribution of frozen meat which the Parisian butchers were boycotting. The Cooperative Wholesale Society opened two of its own cold-storage depots, and the Cooperative Union of Paris was organized to carry on in Paris the work of distribution. It soon extended its activities to include other commodities and finally became the center of all the cooperative activities in Paris. It opened a cooperative restaurant whose receipts in 1918 amounted to 5,911,005 francs ($1,140,824, par), and a number of stores, the majority of its supplies being obtained from the wholesale society. It is stated that in December, 1919, the union had 30,000 members, was operating 214 stores, and doing an annual business of 50,000,000 francs ($9,650,000, par).

Figures for the consumers' cooperative associations show that for 79 Departments, not including the devastated areas, the number of societies has decreased from 2,478 on January 1, 1914, to 2,233, and this in spite of the fact of its being reported that between August, 1914, and July, 1918, 575 new societies had been organized. The membership of these associations increased from 600,782 in 1914 to 1,129,684 in 1918 (a rise from 242 to over 500 in the average membership) and the amount of sales from 208,000,000 francs ($40,144,000, par) to between 560,000,000 and 570,000,000 francs ($108,080,000 and $110,010,000, par). It is pointed out, however, that while the figures for 1918 do show a slight increase in actual business done there is "no ground for exultation, for the increase has only kept pace with the rise in prices."

The Cooperative Wholesale Society has increased its membership from 141 societies in 1907 to 428 in 1918, and 1,088 in 1919, and its sales from 1,877,181 francs ($362,296, par) in 1907 to 41,270,668 francs ($7,965,239, par) in 1917–18 and 76,613,184 francs ($14,786,345, par) in 1918–19. The value of goods manufactured by it increased from 3,797,553 francs ($732,928, par) in 1917–18 to 6,818,096 francs ($1,315,893, par) in 1919. The Cooperative Wholesale Society has its own bank, does a large business in wines, and operates boot and shoe factories at Fougères, Amiens, and Lillers.

Alsace-Lorraine.—Shortly after the signing of the armistice the cooperators of Alsace-Lorraine sought and obtained affiliation with the French cooperative movement. Subsequently they received a credit of 5,000,000 francs ($965,000, par) from the French Government; assistance in the purchase of goods was rendered by the French Cooperative Wholesale Society. In many of the smaller towns and villages, branch stores have been organized.

The Strassburg society had an increase in membership over 1918 of 6,539, in spite of the fact that with the expulsion of Germans it lost 600 members. The society now supplies 25,000 families. Its sales in 1919 amounted to 10,161,452 francs ($1,961,160, par). The society employs 259 persons, whose wages and conditions of employment have been agreed upon with the trade-unions.

Germany.[4]

THE Yearbook of the Central Federation of German Consumers' Cooperative Societies for 1919 contains a wealth of data on the development in Germany during the war of the cooperative movement in general and of consumers' cooperative societies in particular.

In the following table is shown the number of the various classes of cooperative societies registered on January 1 of the years 1914 to 1918:

COOPERATIVE SOCIETIES REGISTERED ON JANUARY 1, OF EACH YEAR, 1914 TO 1918

Class of society.	Number of societies in—				
	1914	1915	1916	1917	1918
Credit societies	19,203	19,568	19,620	19,693	19,793
Industrial societies dealing in raw materials	436	462	542	662	856
Agricultural societies dealing in raw materials	2,429	2,565	2,621	2,703	2,756
Societies for the purchase of merchandise	317	338	347	426	493
Establishment societies:					
Industrial	348	361	360	351	340
Agricultural	1,909	2,073	2,070	2,160	2,218
Societies for the purchase of machinery and tools	17	15	14	14	13
Storage societies:					
Industrial	123	114	127	134	130
Agricultural	512	520	540	567	608
Raw materials and storage societies:					
Industrial	154	166	165	184	187
Agricultural	24	21	22	24	32
roductive societies:					
Industrial	428	430	540	859	1,029
Agricultural	4,001	4,066	4,064	4,076	4,092
Stock breeding and grazing societies	486	540	544	546	560
Consumers' societies	2,340	2,320	2,288	2,280	2,277
Housing and building associations:					
Paper	1,346	1,403	1,386	1,382	1,391
Society houses	128	139	143	140	138
Other societies	378	380	353	364	371
Total	34,579	35,481	35,746	36,565	37,284

It is apparent that the number of cooperative societies has not undergone any considerable change during the war. The relatively large increases in the number of societies dealing in raw materials, those purchasing merchandise, and the industrial productive societies are to be ascribed to the close cooperation of the handicrafts in the purchase of raw material from the State central distributing office. The small decrease in the number of consumers' societies is due to the consolidation of the societies into district societies and also to the fact that a number of small societies which were not affiliated with strong central organizations were not able to cope with the difficulties caused by the war.

The number, class, and membership of the societies affiliated with the five largest central organizations of cooperative societies are shown in the following table for the period 1914–1916:

[4] A short general account of the cooperative movement in Germany was contained in the MONTHLY LABOR REVIEW for March, 1919, pp. 140, 141.

NUMBER AND MEMBERSHIP OF REPORTING COOPERATIVE SOCIETIES AFFILIATED WITH THE FIVE LARGEST CENTRAL ORGANIZATIONS, 1914 TO 1916, BY TYPE OF SOCIETY.

Type of society.	Year.	Societies affiliated with—					Total.
		General Federation of German Purchasing and Economic Cooperative Societies.	General Federation of German Raiffeisen Cooperative Societies.	National Federation of German Agricultural Cooperative Societies.	Central Federation of German Consumers' Societies.	Main Federation of German Industrial Cooperative Societies.	
		Number.					
Credit societies	1914	945	4,421	11,165	.....	438	16,969
	1915	941	4,432	11,555	.....	435	17,363
	1916	924	4,433	11,555	.....	432	17,344
Purchasing, productive, and other societies	1914	49	800	6,064	36	382	7,331
	1915	48	928	6,392	30	452	7,850
	1916	38	890	6,392	29	554	7,903
Consumers' societies	1914	269	9	.....	1,094	.....	1,372
	1915	244	17	.....	1,073	.....	1,334
	1916	255	13	.....	1,068	.....	1,336
Building societies	1914	208	4	36	2	.....	250
	1915	178	3	41	1	.....	225
	1916	190	3	41	1	.....	235
Total	1914	1,471	5,234	17,265	1,132	820	25,922
	1915	1,413	5,380	17,988	1,104	887	26,772
	1916	1,407	5,339	17,988	1,098	986	26,818
		Membership.					
Credit societies	1914	618,408	485,416	1,090,910	.....	118,453	2,313,187
	1915	601,395	485,749	1,109,756	.....	114,320	2,311,220
	1916	592,544	482,523	1,109,756	.....	103,240	2,288,063
Purchasing, productive, and other societies	1914	7,078	57,276	590,030	10,191	33,192	697,767
	1915	6,452	67,188	645,550	9,643	40,454	769,287
	1916	5,749	64,447	645,550	9,351	43,102	768,199
Consumers' societies	1914	305,313	1,749	.....	1,717,519	.....	2,024,581
	1915	312,287	3,618	.....	1,849,434	.....	2,165,339
	1916	334,549	2,281	.....	2,052,139	.....	2,388,969
Building societies	1914	67,999	260	2,893	784	.....	71,936
	1915	61,197	206	3,784	485	.....	65,672
	1916	59,510	183	3,784	485	.....	63,962
Total	1914	998,798	544,701	1,683,833	1,728,494	151,645	5,107,471
	1915	981,331	556,761	1,759,090	1,859,562	154,774	5,311,518
	1916	992,352	549,434	1,759,090	2,061,975	146,342	5,509,193

It may be said that the above five central organizations represent the great majority of consumers' cooperative societies in Germany. The decrease in membership of the credit societies affiliated with the central organizations is probably due to war losses, since the members of these societies are largely middle-class people and small farmers.

The development of the cooperative movement of German consumers' societies during the period January 1, 1903, to January 1, 1919, is illustrated by the following table.

DEVELOPMENT OF THE CONSUMERS' COOPERATIVE SOCIETIES, JAN. 1, 1903, TO JAN. 1, 1919.

[1 mark at par=23.8 cents.]

Item.	Jan. 1, 1903.	Jan. 1, 1919.	Increase.	
			Amount.	Per cent.
Membership	950,000	3,000,000	2,050,000	215.8
	Marks.	*Marks.*		
Total sales of consumers' societies	212,463,700	789,549,000	577,085,300	271.6
Sales of articles produced by the societies	21,312,000	174,663,000	153,351,000	719.6
Discount sales of noncooperative stores to members of consumers' societies	25,346,000	11,280,000	[1] 14,066,000	[1] 55.5
Cash on hand	2,928,850	6,411,000	3,482,150	118.9
Stock of merchandise	28,022,150	82,470,000	54,447,850	194.3
Capital invested in securities	13,452,950	152,700,000	139,247,050	1,035.1
Fixtures, etc	4,797,500	11,805,000	7,007,500	146.1
Real estate	29,307,500	135,375,000	106,067,500	361.9
Share capital	18,569,650	57,210,000	38,640,350	208.1
Reserve fund	8,894,850	52,743,000	43,848,150	493.0
Loans contracted and savings deposits	7,079,400	146,694,000	139,614,600	1,972.1
Mortgage debts	16,131,950	59,058,000	42,926,050	266.1
Shares in houses (mortgage bonds)	1,976,950	7,686,000	5,709,050	288.8
Debts for merchandise	4,646,450	16,257,000	11,610,550	249.9
Credits for discounts, and surplus	22,066,600	50,697,000	28,630,400	129.7

[1] Decrease.

The consumers' cooperative movement now includes one-fifth of the population, if the families of members of consumers' societies are considered. Even the powerful economic disturbances caused by the war could not retard the development of consumers' societies.

The relatively larger increase in sales as compared with membership of these societies shows that the members have patronized the stores of their societies to a greater extent than before. Another noteworthy fact is that the sales of articles produced by the societies themselves showed an increase of 720 per cent. This figure does not include the articles produced by the Cooperative Wholesale Society. Production by societies themselves is so increasing that soon one-half of the articles purchased by organized consumers from their societies will have been produced either by the societies themselves or by their Cooperative Wholesale Society.

Discount sales of noncooperative concerns to members of consumers' societies have decreased 55.5 per cent. These sales include only articles which the consumers' societies do not keep in stock. As the consumers' societies are continually enlarging the number of articles for sale in their stores, discount sales by noncooperative stores decrease proportionately. During the war, moreover, when stocks in all classes of stores were very low, a number of noncooperative concerns which had discount contracts with consumers' societies refused to live up to these contracts or to renew them.

The value of stocks of merchandise rose 194 per cent. The relative increase is smaller than that of sales, which is probably due to the great scarcity of all kinds of merchandise during the war.

The capital of the societies consists of share capital and of the reserve funds. The share capital increased 208 per cent. The reserve funds increased 493 per cent. The share capital and the reserve funds combined show that the financial strength of consumers' societies has increased considerably but not enough to make

satisfactory the financial condition of the societies. There was an enormous increase in savings deposits—1,972 per cent. These savings deposits may, however, be withdrawn by the members on short notice, and must, therefore, be invested in quick assets. In order to put the consumers' societies on a sound financial basis the funds required for their operation should, however, be the societies' own funds and be composed chiefly of share capital and reserve.

The item bills payable for merchandise increased 250 per cent. Compared with the total amount of sales, which for 1918 was 789,549,000 marks ($187,912,662, par), the item of 16,257,000 marks ($3,869,166, par) for bills seems insignificant. It shows that the consumers' societies pay cash for nearly all their purchases.

The development of the movement of cooperative consumers' societies per 1,000 members during the period January 1, 1903, to January 1, 1918, is shown in the following table:

DEVELOPMENT OF CONSUMERS' SOCIETIES PER 1,000 MEMBERS, 1903 TO 1918.

[1 mark at par=23.8 cents.]

Item.	Jan. 1, 1903.	Jan. 1, 1910.	Jan. 1, 1914.	Jan. 1, 1918.
	Marks.	*Marks.*	*Marks.*	*Marks.*
Total sales	223,646	269,606	285,697	263,183
Sales of articles produced by the societies	.....	36,619	53,264	58,221
Discount sales of noncooperative stores to members of consumers' societies	26,680	21,885	18,363	3,760
Cash on hand	3,083	2,567	2,396	2,137
Stock of merchandise	29,497	31,979	32,201	27,490
Capital invested in securities	14,161	17,197	30,870	50,900
Fixtures, etc	5,050	7,013	8,806	3,935
Real estate	30,850	43,292	50,819	45,125
Share capital	19,547	19,195	18,878	19,070
Reserve	9,363	11,524	13,918	17,581
Loans contracted and savings deposits	7,452	18,148	36,051	48,898
Mortgage debts	16,981	21,753	23,116	19,686
Shares in houses (mortgage bonds)	2,081	3,153	3,513	2,562
Bills payable for merchandise	4,891	5,714	5,524	5,419
Discount credits of members	.....	4,060	8,864	7,302
Surplus	23,228	20,603	16,265	9,597

As concerns the composition of the membership of cooperative consumers' societies, no data are available for all societies combined, but below are given occupational statistics, for the year 1918, of the membership of the Central Federation of German Consumers' Societies, which may be considered representative.

OCCUPATIONAL STATISTICS OF THE MEMBERSHIP OF THE CENTRAL FEDERATION OF GERMAN CONSUMERS' SOCIETIES, 1918.

Occupational group.	Number.	Per cent.
Independent tradespeople	120,794	5.63
Independent farmers	45,889	2.13
Professional workers, State and municipal employees	98,555	4.59
Wage earners in industry	1,554,394	72.34
Wage earners in agriculture	45,485	2.11
No fixed occupation (pensioners, persons living on their income, etc.)	283,739	13.20
Total membership	2,148,856	100.00
Male membership	1,683,019	78.32
Female membership	465,837	21.68

India.

THE cooperative movement in India dates from March 25, 1904, when the cooperative credit societies act was passed. The growth of the movement has, however, been rapid. In 1915 there were 17,327 cooperative societies, having 824,469 members, and capital to the amount of Rs. 89,661,722 ($29,086,263). Since India is primarily agricultural it is not surprising that of the above number 15,861, or about 92 per cent, are agricultural credit associations. Even this number is inadequate, since there are in India 200,000,000 agriculturists to be financed. It is stated that by the aid of these associations "laborers have become owners; hopeless debt has been banished and the money lender driven out; agriculture and industry have been developed, and the villagers in the poorest tracts have become prosperous; the illiterate man has turned toward education and the drunkard has been reclaimed; the middleman has been eliminated, the raiyat is getting full value for his produce, and paying his rent with ease; village life has been stimulated by associated action and by the business education of the bank; punctuality, thrift, and mutual confidence are being taught; litigation has decreased and morality has improved; activity has taken the place of stagnation and routine; associated action has replaced mutual distrust."

Except for the credit societies, cooperation is still in the experimental stage.

The greatest obstacle to the growth of cooperation in India is stated to be the illiteracy of the people.

Bengal.—The year 1917–18 was a year of hardship for the cooperative societies of Bengal, owing to the extremely low prices obtained for jute and rice. In 1918–19, however, better prices were obtained for jute and the price of rice rose to "unprecedented heights."

In 1918–19 the number of cooperative societies in Bengal showed an increase of 615 over the previous year, and the membership increased 16,021 in the same time. A large increase in financial prosperity was shown by the societies, but this, it is pointed out, may have been partly due to the rise in the price of the rice and jute produced by members of the societies. One society, which in the year ending June 30, 1919, realized a "profit" of Rs. 300,000 ($97,320, par), includes in its activities the operation of a purchase and sale society, a cattle insurance business and a demonstration farm, as well as educational activities, dispensing of medicine, relief work, and town improvement.

The table below shows the operations during 1918–19 of various classes of societies in Bengal:

OPERATIONS OF COOPERATIVE SOCIETIES IN BENGAL, INDIA, 1918-19, BY CLASS OF SOCIETY.

[1 rupee at par=32.44 cents.]

Class and society.	Number of societies.	Number of members.	Amount of business.	Share and working capital.	Reserve fund.	Profit.
Agricultural.			*Rupees.*	*Rupees.*	*Rupees.*	*Rupees.*
Credit societies	3,894	128,471	[1] 3,066,454	8,531,532	1,164,560	231,619
Purchase and purchase and sale societies	5	2,628	[2] 151,453	85,360	1,851	4,123
Production and sale societies	23	3,556	[2] 513,452	739,470	292,349	301,786
Nonagricultural.						
Credit societies	104	31,184	2,928	4,591,708	185,101	148,410
Purchase and purchase and sale societies	18	2,378	112,278	110,405	814	512
Production and sale societies	136	1,995	[2] 14,104	88,746	4,353	1,208

[1] Loans to individuals and societies.
[2] Including sale of goods to members and purchase of members' products.

Besides the societies shown in the table there are also 52 central cooperative banks having a working capital of Rs. 8,260,976 ($2,679,861, par) and a provincial bank whose working capital is Rs. 1,963,069 ($636,820, par).

Italy.

THE cooperative movement in Italy dates back to about 1854 when in order to mitigate the effects of a famine, the General Association of Workers at Turin organized a cooperative store. Ten years later the railway officials at Turin organized a consumers' association which had immediate success and soon was doing an annual business of over a million lire ($193,000, par). About the same time (1864) a similar organization was formed by railway officials at Milan. Difference of opinion caused a division of the society into two societies, both of which still exist and rank among the most important societies in Italy.

The period 1870–1890 saw the formation of a number of cooperative agricultural societies, as well as productive societies formed by various occupational groups, such as printers, joiners, blacksmiths, shoemakers, masons, dockers, etc. Though many of these latter failed because of "their inability to conquer the individualist spirit of their members," enough were successful to demonstrate the feasibility of this form of cooperative enterprise.

The National Cooperative League was formed at the first National Congress, held at Milan in October, 1866. This league is composed of societies representing all types of cooperative effort. Since the formation of the league the number of affiliated societies has increased from 36 in 1866 to 3,000 in 1919.

It is stated that in the past few months the number of cooperative societies in Italy has grown to 10,000. The societies are small, however, the average membership being 150.

Figures collected by the Italian National Cooperative League show that the 7,249 societies for which information was obtained are divided, according to type of society, as follows:

Consumers' societies	3,814
Productive and labor societies	2,351
Agricultural societies	425
Miscellaneous societies	425
Federations of societies	234
Total	7,249

Fifty of the most important societies did a combined business of 280,000,000 lire ($54,040,000, par) during 1918 and exceeded this figure in 1919. The Cooperative Union at Milan alone had a turnover of 70,000,000 lire ($13,510,000, par), and the Cooperative Alliance at Turin, of 40,000,000 lire ($7,720,000, par).

The labor societies form a special phase of the cooperative movement in Italy. These societies undertake contracts for work, which is performed by the members. It is reported that in some Provinces these cooperative societies have practically driven private contractors out of business. The cooperative labor societies of Reggio were given the work of constructing the Reggio-Crano Railway, and have for the last 10 years been responsible for its management.

Another distinctive feature of the Italian movement is the collective leaseholding societies organized generally for the purpose of finding employment for their members. Though, according to reports, these societies have not acquired sufficient land to provide continuous employment for their members, their work has resulted in a distinct improvement in this respect. The following statement shows the amount of land cultivated by the collective leaseholding societies in each Province:

	Acres.
Bergamo	2,189
Milan	2,241
Pavia	1,203
Parma	2,901
Reggio d'Emilia	3,571
Modena	240
Bologna	4,435
Ravenna	17,297
Ferrara	1,011
Sicily	70,137

Netherlands.

THE cooperative movement in the Netherlands had its beginning in 1837, when an agricultural cooperative association was formed in Groningen. Since that time the movement has expanded until its activities now cover a wide range. In the field of production are found cooperative creameries, sugar refineries, strawboard factories, potato-meal factories, associations for the purchase of live stock, feed, fertilizers, and implements, associations for the marketing of agricultural and horticultural products; in the field of banking there are farm-loan banks, savings, and mortgage banks; insurance is represented by hail, live stock, and various types of mutual life, fire, accident, and unemployment insurance; in addition there are the numerous and well-organized consumers' societies, the cooperative kitchens,

cooperative building associations, and cooperative associations of other forms.

It is stated that the first year of the war was a period of unprecedented prosperity for all types of cooperative societies in Holland. Thereafter, however, the societies suffered because of the Government rationing system which prevented the securing of adequate supplies, since supplies were regulated on a prewar basis, which of course took no account of the societies' greatly increased membership.

The following table shows the growth of the various types of cooperative societies in specified years from 1890 to 1917:

NUMBER OF SOCIETIES OF EACH TYPE IN THE NETHERLANDS, IN SPECIFIED YEARS, 1890 TO 1917.

Type of society.	Number of societies of each type in—					
	1890	1900	1910	1913	1914	1917
Consumers' societies.						
Stores	34	74	199	254	207	343
Bakeries	10	39	100	121	126	142
Butcheries	2	3	10	10	10	10
Fuel societies	1	14	24	31	33	57
Agricultural societies	3	177	302	348	362	416
Other consumers' societies	.....	21	47	65	73	97
Producers' societies.						
Clothing and shoe manufacturing societies	1	2	11	11	11	12
Printing plants	1	5	6	6	6	6
Creameries	19	441	696	763	798	845
Farmers' marketing societies	4	18	29	36	39	52
Poultry, egg-selling, and beekeeping societies	.....	2	7	8	8	8
Export butcheries	.....	1	2	2	2	4
Other producers' societies	2	29	108	170	188	229
Other types of societies.						
Savings and loan associations	12	100	536	687	715	796
Insurance societies:						
Life	1	2	7	7	7	7
Fire	.....	1	17	20	20	29
Health and unemployment	1	1	9	9	9	11
Burial	.....	2	3	3	3	5
Live stock	.....	3	6	8	8	12
Building associations	32	87	201	252	269	302

The cooperative movement in the Netherlands has been characterized by a lack of unity between the producers' and consumers' organizations. Even the consumers' movement has been divided into three distinct federations—the Socialist League of Dutch Workingmen's Cooperative Societies, the Roman Catholic Cooperative Union, and the so-called "neutral" Dutch Cooperative Union. The growth of each of these organizations since its formation is shown in the following table:

GROWTH OF DUTCH CONSUMERS' FEDERATIONS.

Organization and year.	Number of affiliated societies.	Number of members.
Dutch Cooperative Union:		
1890 [1]	16	7,110
1917	167	139,681
1918	170	154,681
League of Dutch Workingmen's Cooperative Societies:		
1907 [1]	17	8,300
1917	42	42,449
1918	43	38,754
Roman Catholic Cooperative Union:		
1912 [1]	(2)	(2)
1917	81	(2)
1918	192	25,705

[1] Year of organization. [2] Not reported.

During the war, circumstances led to the organization of a central committee, formed of representatives of each of the federations, to protect the interests of cooperators. Apparently the advantages of joint action were demonstrated, for it is now reported that two of the federations, the League of Dutch Workingmen's Cooperative Societies, and the Dutch Cooperative Union, have decided to amalgamate to form a new body, which will be called the Central Union of Dutch Distributive Societies. The aim of this new union will be: (1) the organization of Dutch consumers' societies for the safeguarding of their common interests; (2) the furtherance and protection of the interests of the consumers; (3) the spread of the cooperative movement for the advancement of purchase in common and of cooperative production; and (4) the furtherance of the knowledge of the cooperative movement.

Some degree of unity had been previously attained in purchasing, through the Cooperative Wholesale Society which, though organized as the joint purchasing agency for the stores of the Eigen Hulp Society, undertook the function of wholesale purchasing for the Dutch Cooperative Union, on the organization of that body in 1890. In 1915 it became a separate organization; it was thus enabled to receive into membership societies affiliated with the three federations mentioned above. A number of independent societies have also become members of the wholesale society.

Until the separation of the two bodies on September 26, 1914, the membership of the wholesale society was identical with that of the Dutch Cooperative Union. Its development since that time is shown in the following table:

OPERATIONS OF THE DUTCH COOPERATIVE WHOLESALE SOCIETY, 1915 to 1918.

Year.	Number of affiliated societies.	Number of members.	Amount of business.	Net savings.
1915	132	94,320	$2,506,910	23,597
1916	158	111,214	3,608,876	30,887
1917	228	143,766	4,020,120	46,974
1918	284	168,370	[1] 2,917,063	(2)

[1] 11 months. [2] Figures not yet available.

The wholesale society operates production departments which roast coffee, grind spices, mix tea, and manufacture soap, wooden shoes, and flour. In cooperation with a society in Rotterdam it maintains a chemical laboratory for the analysis of foods. In 1914 it established a meat-packing plant which, however, it was forced to discontinue in 1918 because of the scarcity of meat and the government restrictions on slaughtering.

In 1917 it employed 118 persons, whose wages are regulated by collective agreement between the societies and the employees.

Norway.

IN NORWAY, as in other countries, at the outbreak of the war, the cooperative organizations had at their disposal sufficient supplies to prevent a sudden and extreme rise in prices. As the war progressed, however, a growing shortage of goods and the Government's participation in trade created difficulties for the societies, particularly the wholesale society. Eventually the formation of new retail societies had to be discouraged by the wholesale organization since it was impossible to furnish them with supplies. In spite of this fact, however, the figures of the Norwegian Cooperative Wholesale Society show progress even though the increase in sales is largely due to high prices.

The following table shows the development of the Norwegian Cooperative Union during the war period:

OPERATIONS OF THE NORWEGIAN COOPERATIVE UNION, 1914 TO 1918.

[1 krone at par=26.8 cents.]

Year.	Number of affiliated societies.	Number of members.	Amount of business.
			Kroner.
1914	149	31,000	10,019,600
1915	172	34,848	16,252,300
1916	205	47,034	24,347,900
1917	237	59,969	39,866,000
1918	235	67,910	48,139,900

Roumania.

THE first manifestation of the cooperative spirit in Roumania appeared in the founding of a "people's bank" in 1894. All other forms of cooperative enterprise since developed are in the nature of offshoots from these banks. By 1903 the number of these banks had reached 700, the membership had risen to 59,844, and the capital to 4,250,600 francs ($820,366, par). In that year a central bank and clearing house, the Casa Centrala, was formed, which now acts as the central credit institution of the whole peasant cooperative system.

In 1918 this central bank, with its 3,170 member banks, formed a network covering the entire country. This system of banks represented 645,000 stockholders, divided, according to occupation, approximately as follows: 600,000 were peasants, 10,000 were mer-

chants, 5,000 were school-teachers, 4,000 were priests, and 26,000 were workers in miscellaneous occupations.

Under a system which had grown up, in many districts the cultivatable land was practically monopolized by speculators who leased the land from the owners and either re-leased it or worked it with peasant labor at wages fixed by themselves. The peasant thus had no choice in the matter of employment or wages.

This situation was remedied to some extent by the laws of 1905 and 1907. The first legalized the formation of peasant cooperative lease-holding societies, and the second, in order to make land available to the peasant, authorized the purchase of the large estates by the communes. Though the latter law was defective, in that owners of large estates were not compelled to sell, yet under its provisions 109 estates amounting to 127,292 hectares (314,539 acres) were purchased between 1908 and 1915, of which 20,000 hectares (49,420 acres) were sold to peasants and the remainder rented to them.

The peasant cooperative land-leasing associations formed under the law of 1905 showed "an astonishing ability" to compete with the speculators. They made a practice of hiring experts to advise them with regard to rotation of crops, choice of seeds, etc. As a result of their systematic efforts toward improvement of agricultural methods, the average yield in the best years of the land taken over by these societies has been doubled.

During the war period, and particularly after Roumania entered the war in 1916, the peasants became accustomed to cooperative effort along numerous lines and on a large scale. Under the abnormal conditions caused by the war the Government was obliged to regulate trade and take charge of the provisioning of the people. In the villages only the cooperative associations were found to be capable of performing this function, and the people's banks, the most uniform and best organized of the cooperative organizations, were placed in charge. Only through them were the people able to obtain food and carry on exchange of products. During the period October, 1916, to March, 1918, through the medium of the banks, merchandise to the value of over 14,500,000 francs ($2,798,500, par) was supplied to the peasants and produce worth 7,000,000 francs ($1,351,000, par) was sold.

Cooperative production has been at a great disadvantage. It is stated that the industrial enterprises with which the cooperative productive associations compete enjoy exemption from duty on raw materials, special rates on the Government railways, and various other privileges which were not until recently accorded to the cooperative societies.

The consumers' cooperative associations have been "held within small compass by the simplicity of peasant life and the fact that the peasants produce nearly everything they use."

The following table shows the growth of the various types of cooperative societies in Roumania during the period 1908 to 1916, the latest year for which figures are available:

NUMBER OF COOPERATIVE ASSOCIATIONS IN ROUMANIA, NUMBER OF MEMBERS, AND AMOUNT OF CAPITAL AND RESERVE, 1908, 1912, AND 1916, BY TYPE OF ASSOCIATION.

[1 franc at par=19.3 cents.]

Kind of association.	Number of associations.			Number of members.			Capital and reserve.		
	1908	1912	1916	1908	1912	1916	1908	1912	1916
							Francs.	*Francs.*	*Francs.*
Consumers' societies	207	294	340	7,580	13,105	16,000	951,237	1,817,806	2,500,000
Forest exploitation societies	30	143	165	1,189	8,208	13,000	229,576	1,057,613	1,280,000
Bakeries	9	20	25	372	1,068	1,500	28,820	101,037	126,000
Dairies	5	7	10	164	360	600	4,154	10,010	31,800
Mills and agricultural machinery associations	7	42	60	217	1,947	3,000	26,303	255,642	325,000
Gardening associations	5	9	25	198	471	750	17,879	31,281	102,500
Vineyards and apiaries	2	5	8	91	188	350	1,737	40,018	65,000
Community sales	2	5	150	135	312	15,000	15,063	87,481	108,000
Mines, quarries, and mineral waters	.....	7	12	.....	593	700	.....	94,379	140,000
Cooper shops, woodworking societies, and tile works	2	9	13	72	364	550	7,409	101,767	138,000
Miscellaneous associations	4	5	8	130	270	400	5,469	20,743	40,000
Total	273	546	[1] 810	[1] 10,142	26,886	51,850	[1] 1,277,654	[1] 3,617,787	4,866,900

[1] This total is not the exact sum of the items but is as given in the report.

An interesting development has been taking place since December, 1918, when two decree laws provided for the expropriation of all cultivatable crown and institutional lands, all lands of subjects of foreign birth, and all rural lands belonging to absentees. In addition 2,000,000 hectares (4,942,000 acres) were expropriated from private estates of over 100 hectares (247 acres) of cultivatable land. The law of December 31, 1918, reorganized the central cooperative bank, tle Casa Centrala, and gave it charge of the sale of the expropriated land to the peasants. It is stated that while great practical difficulties were encountered, expropriation was practically complete by June, 1919.

Other laws, enacted shortly after the expropriation acts, turned over to the cooperative associations the exploitation of the forests and the promotion of the creation of communal pastures.

One of the leaders in the Roumanian cooperative movement is quoted as saying: "We believe that before long the entire production of the villages will flow through the cooperatives." Where community production will leave off and strictly private enterprise begins, is stated to be impossible of prediction. Already the two are in conflict. Because the first-rate men found it more profitable to work for themselves, the cooperatives have, it is said, had to employ men who failed in their own ventures. According to the report, there are, however, those who are of the opinion that the development of cooperative effort will eliminate private capitalistic enterprise by "open competition."

Sweden.

THE founding of distributive societies in Sweden began during the period 1860–1870, about the same time as in Denmark, but the development of the societies was very gradual, and did not quicken until about the beginning of the present century. In 1899,

a central organization, the Cooperative Union, was founded, in which were federated various types of cooperative societies. At first the union was purely a propagandist organization. In 1904, however, it established the Cooperative Wholesale Society. With the establishment of the wholesale society the membership grew rapidly until at the end of 1918 there were 849 societies affiliated with the union.

In 1908, the union opened a savings bank which has made rapid progress. In the same year the union decided to limit membership to those societies which require cash payment, and in 1911, the wholesale society ceased the supply of goods to nonmembers.

The progress of the union during the war is shown in the following table:

DEVELOPMENT OF SWEDISH COOPERATIVE UNION DURING THE PERIOD 1914 TO 1918.

[1 krone at par=26.8 cents.]

Year.	Number of societies affiliated.	Number of societies reporting.	Membership of reporting societies.	Amount of business.
				Kroner.
1914	583	537	111,293	39,466,473
1915	687	581	127,876	54,608,695
1916	785	737	169,063	81,661,807
1917	.....	.....	177,473	.....
1918	849	771	204,906	143,871,705

The following statement shows the financial condition, at the end of 1918, of the 771 members of the union for which statistics are available:

	Kroner.
Share capital	7,668,547
Reserves	4,749,269
Goods in stock	23,689,231
Debts outstanding	1,257,229
Turnover	143,871,705
Gross surplus	13,614,588
Net surplus	4,035,124

Profit Sharing and Labor Copartnership in the United Kingdom.

THE British Ministry of Labor has recently issued a report on profit sharing and labor copartnership in the United Kingdom,[1] which states that the number of schemes which were in existence October 31, 1919, so far as reported to the ministry, was 182, the number of persons employed by the firms having these schemes being about a quarter of a million. These 182 schemes, it is added, were the survivors of 380 schemes which had been started at one time or another since the year 1865. It seems that the

[1] Great Britain. Ministry of Labor. Report on profit sharing and copartnership in the United Kingdom. London, 1920. 244 pp.

greatest activity in the formation of profit-sharing schemes was shown in the four years from 1889 to 1892.

The report suggests that the abandonment of the schemes which have ceased to exist has been caused by inability of the firms to earn sufficient profit to make profit sharing a success, or to some other cause independent of the profit-sharing scheme rather than to any defects inherent in the system itself, or to the dissatisfaction of employers or of the employees. Ninety-one out of 198 cases of abandonment are attributed to this last cause.

While in every year a number of firms are unable to pay any bonus at all, still it is estimated that, taking all the schemes into consideration, the average bonus over a long series of years is about 5 or 6 per cent. The average ratio of bonus to wages, covering the years 1901 to 1918, taking into account both the number who actually participated and the number who would have been entitled to participate in cases where the bonus was nil, is given as 5.5 per cent.

The number of participating employees, the total amount of bonus paid, and the average bonus per employee, by industry group, for the year 1918, are shown in the following table:

NUMBER OF SCHEMES, NUMBER OF EMPLOYEES AFFECTED, AND TOTAL AND AVERAGE AMOUNT OF BONUS PAID, BY INDUSTRY GROUP, IN 1918.

[1£ at par=$4.8665.]

Industry group.	Number of schemes.	Number of employees participating (or entitled to participate).	Total amount of bonus.	Average bonus per employee.
			£	£ s. d.
Chemicals, oils, etc	5	2,393	30,509	12 15 0
Food and drink	10	3,622	43,396	11 19 7
Gas	31	22,447	24,985	1 2 3
Engineering, etc	6	15,004	34,415	2 5 10
Printing, etc	10	3,870	29,461	7 12 3
Textile	9	5,784	52,254	9 0 8
Merchants, etc	15	6,959	67,817	9 14 11
Insurance, etc	1	18,500	None.	None.
All other	18	3,254	16,891	5 3 10
Total	105	81,833	299,728	3 13 3

The report states that if employees in firms which distributed no bonus be excluded, the total number of actual participants in the schemes for which particulars can be given was 52,056, and the average bonus was £5 15s. 2d. ($27.99, par).

The report gives the rules of a number of schemes of profit sharing or copartnership.

EMPLOYMENT AND UNEMPLOYMENT.

Employment in Selected Industries, April, 1920.

THE Bureau of Labor Statistics received and tabulated reports concerning the volume of employment in April, 1920, from representative establishments in 13 manufacturing industries. Comparing the figures of April, 1920, with those of identical establishments for April, 1919, it appears that in 11 industries there was an increase in the number of persons employed, while in 2 there was a decrease. The largest increase, 58.7 per cent, is shown in men's ready-made clothing, and the decreases, 5.8 and 4.6 per cent, appear in car building and repairing and in cigar manufacturing, respectively.

All of the 13 industries show an increase in the total amount of the pay roll for April, 1920, as compared with April, 1919. The most important percentage increases, 151.2, 90.7, and 81.1, appear in men's ready-made clothing, woolen, and hosiery and underwear, respectively. The big increases over last year's figures are due in part to a rise in volume of employment and in part to a recovery from the decline last year.

COMPARISON OF EMPLOYMENT IN IDENTICAL ESTABLISHMENTS IN APRIL, 1919, AND APRIL, 1920.

Industry.	Establishments reporting for April, both years.	Period of pay roll.	Number on pay roll.			Amount of pay roll.		
			April, 1919.	April, 1920.	Per cent of increase (+) or decrease (−).	April, 1919.	April, 1920.	Per cent of increase (+) or decrease (−).
Iron and steel	109	½ month.	157,237	172,487	+ 9.7	$9,985,239	$12,678,325	+ 27.0
Automobile manufacturing	39	1 week	106,337	136,429	+28.3	3,088,919	4,524,146	+ 46.5
Car building and repairing	37	½ month.	44,530	41,964	− 5.8	2,427,945	2,579,701	+ 6.3
Cotton manufacturing	52	1 week	45,724	51,754	+13.2	683,897	1,080,590	+ 58.0
Cotton finishing	11	...do	6,043	7,033	+16.4	106,528	153,815	+ 44.4
Hosiery and underwear	65	...do	29,499	35,092	+19.0	399,824	724,143	+ 81.1
Woolen	51	...do	37,010	51,713	+39.7	683,212	1,302,990	+ 90.7
Silk	47	2 weeks	15,171	16,303	+ 7.5	527,618	746,883	+ 41.5
Men's ready-made clothing	45	1 week	21,677	34,406	+58.7	464,206	1,165,865	+151.2
Leather manufacturing	32	...do	15,914	17,070	+ 7.3	344,649	449,760	+ 30.5
Boots and shoes	67	...do	52,267	58,788	+12.5	1,028,868	1,491,302	+ 44.9
Paper making	57	...do	28,316	32,740	+15.6	585,531	882,274	+ 50.7
Cigar manufacturing	51	...do	17,183	16,394	− 4.6	262,219	342,059	+ 30.5

Comparative data for April, 1920, and March, 1920, appear in the following table. The figures show that in 6 industries there was an increase in the number of persons on the pay roll in April as compared with March and in 7 a decrease.

The largest increases in the number of people employed appear in car building and repairing, 4.2 per cent; and men's ready-made cloth-

ing, 2.8 per cent. Percentage decreases of 3.4 and 2.3 appear in leather manufacturing and cotton finishing, while both automobile manufacturing and boots and shoes show a decrease of 1.7 per cent.

In comparing April, 1920, with March of this year, 5 industries show an increase in the amount of money paid to employees and 8 a decrease. The most important increase is one of 4.9 per cent in hosiery and underwear, while car building and repairing shows an increase of 1.1 per cent. The greatest decreases are 5.9 per cent in iron and steel, 4.7 per cent in cigar manufacturing, 4 per cent in leather manufacturing, and 3.9 per cent in automobile manufacturing. April production was somewhat curtailed because of the railroad strike.

COMPARISON OF EMPLOYMENT IN IDENTICAL ESTABLISHMENTS IN MARCH AND APRIL, 1920.

Industry.	Establishments reporting for March and April.	Period of pay roll.	Number on pay roll.			Amount of pay roll.		
			March, 1920.	April, 1920.	Per cent of increase (+) or decrease (−).	March, 1920.	April, 1920.	Per cent of increase (+) or decrease (−).
Iron and steel	111	½ month.	175,200	173,822	−0.8	$13,592,304	$12,784,705	−5.9
Automobile manufacturing	38	1 week..	130,716	128,445	−1.7	4,417,822	4,246,399	−3.9
Car building and repairing	34	½ month.	36,140	37,666	+4.2	2,291,280	2,316,090	+1.1
Cotton manufacturing	53	1 week..	53,768	53,186	−1.1	1,123,201	1,124,826	+ .1
Cotton finishing	10	...do....	6,961	6,802	−2.3	149,716	147,846	−1.3
Hosiery and underwear	65	...do....	33,844	34,184	+1.0	670,980	704,159	+4.9
Woolen	51	...do....	51,692	51,713	+(1)	1,294,613	1,302,990	+ .6
Silk	47	2 weeks.	16,193	16,303	+ .7	762,554	746,833	−2.1
Men's ready-made clothing	48	1 week..	34,036	35,004	+2.8	1,199,312	1,182,988	−1.4
Leather manufacturing	32	...do....	17,669	17,070	−3.4	468,315	449,760	−4.0
Boots and shoes	66	...do....	59,621	58,622	−1.7	1,483,694	1,488,626	+ .3
Paper making	56	...do....	31,866	31,667	− .6	853,730	852,812	− .1
Cigar manufacturing	54	...do....	16,934	16,998	+ .4	369,768	352,314	−4.7

[1] An increase of less than one-tenth of 1 per cent.

In addition to the data presented in the above tables as to the number of employees on the pay roll, 87 plants in the iron and steel industry reported 132,771 employees as actually working on the last full day of the pay period reported for April, 1920, as against 123,867 for the reported pay-roll period in April, 1919, an increase of 7.2 per cent. Figures given by 98 establishments in the iron and steel industry for April, 1920, and March, 1920, show that 141,361 employees were actually working on the last full day of the pay period reported for in April, 1920, as against 142,763 for the period in March, 1920, a decrease of 1 per cent.

Changes in Wage Rates.

DURING the period March 15 to April 15, 1920, there were increases in wages made by establishments in all of the 13 industries. Of the establishments reporting, many did not answer the inquiry relative to this item, but in such cases it is not likely that changes were made.

Iron and steel.—Two establishments reported an increase of 10 per cent affecting 67 per cent of the employees in one and 12 per cent of the employees in the other. About 9 per cent of the force in one plant received an increase of about 6 per cent. Forty-five per cent of the men in one concern were increased 75 cents per day.

Automobile manufacturing.—One establishment gave an increase of 25 per cent to 75 per cent of the employees. Fifteen per cent of the men in one plant received an increase of 9.5 per cent. An increase of 5 per cent, affecting 36 per cent of employees, was reported by one concern. One establishment gave an increase of 2.2 per cent to 38 per cent of the force while another establishment gave an increase of 2 per cent to 4 per cent of the force.

Car building and repairing.—An increase of 15 per cent, affecting 20 per cent of the force was reported by one firm. One establishment gave an increase of 7 per cent to 8 per cent of the employees, while another establishment granted an increase of 2.9 per cent to 20 per cent of the foundry men.

Cotton manufacturing.—Two firms gave an increase of 10 per cent, affecting all employees in one firm, while the other firm did not state the number of employees affected. The entire force in two mills were given an increase of 8 per cent. All of the men in one establishment received an increase of about 5 per cent.

Cotton finishing.—An increase of 15 per cent, affecting 8 per cent of the employees, was reported by one establishment.

Hosiery and underwear.—One establishment reported an increase of 15 per cent but made no further statement. All of the employees in one mill were given an increase of 10 per cent, while 75 per cent of the employees in another mill received an increase of 5 per cent.

Woolen.—All of the employees in one establishment received an increase of 8 per cent.

Silk.—One firm granted an increase of 7.8 per cent, affecting 15 per cent of the employees while another firm gave an increase of 7 per cent affecting 22 per cent of the employees. About 9 per cent of the men in one establishment received an increase of about 6 per cent. All of the pieceworkers in one concern were increased 5 cents per hour.

Men's ready-made clothing.—One establishment gave an increase of 20 per cent to part of its employees.

Leather.—All of the employees in one establishment received an increase of 12 per cent while the entire force in another establishment were given an increase of 10 per cent. Ten per cent of the men in one concern received an increase of 6 per cent. One firm reported a general increase but made no further statement. All of the full-time workers in one establishment received a bonus.

Boots and shoes.—Two factories granted a 10 per cent increase affecting 6 per cent of the employees in one of the factories and 5 per cent of the men in the other. An increase of 8.8 per cent, affecting 4.5 per cent of the force was reported by one concern. Three plants gave an increase of 5 per cent, affecting 10 per cent of the force in one establishment, 8 per cent of the force in the second establishment, and 4 per cent of the force in the third establishment. One firm reported an increase, but made no further statement.

Paper making.—One establishment reported an increase of 25 per cent, affecting 7 per cent of the employees, while another establishment reported increases ranging from 12½ to 22 per cent, but made no further statement. The entire force in one firm received an increase of about 14 per cent. All the men in one concern received an increase of 12½ per cent, while the entire force in another concern received an increase of 12 per cent. One firm reported an increase of about 12 per cent, affecting about 17 per cent of the employees. All employees in three establishments were given an increase of 10 per cent. Fifty per cent of the force in one concern received an increase of 9 per cent. Two mills gave an increase of about 8 per cent, affecting 20 per cent of the employees in one mill and 18 per cent of the employees in the other. An increase of 7.4 per cent, affecting 37 per cent of the employees, was reported by one establishment, while 70 per cent of the employees in another establishment received an increase of 7 per cent. One firm that reported a general advance of wages made no further statement.

Cigar manufacturing.—All of the employees in one establishment received an increase of 16⅔ per cent. One establishment gave increases ranging from 10 to 15 per cent, affecting 70 per cent of the employees. Two firms reported an increase of 10 per cent, affecting 53 per cent of the employees in one firm and 40 per cent of the employees in the other. All of the employees in one establishment were given an increase of 7.5 per cent, while the entire force in two establishments were given an increase of about 5 per cent. Ninety per cent of the men in one concern received an increase of 4.5 per cent. One establishment reported an increase of 10 per cent but did not state the per cent of employees affected. The factory workers in one plant received a bonus.

Changes in Volume of Employment in Representative Bituminous Coal Mines.

RECENTLY the Bureau has undertaken to increase gradually the number of industries from which to collect information concerning changes in employment from month to month.

One of the most important basic industries is that of coal mining; hence this industry was selected for addition to the list of 13 industries that have been covered for some time. Questionnaires were sent out and a sufficient number of returns have been received from bituminous coal-mine operators to warrant the publication of the material collected.

These figures, collected in large volume month after month, afford a barometer of industrial conditions of value to operators, manufacturers, merchants, and the general public. The information collected is published with the hope that more operators, both of anthracite and bituminous coal mines, will cooperate in this monthly collection and compilation of employment figures.

CHANGES IN VOLUME OF EMPLOYMENT IN REPRESENTATIVE BITUMINOUS COAL MINES, 1919, AND JANUARY TO APRIL, 1920.

Month and year.	Number of mines.	Number on pay roll.	Amount of pay roll for half month.	Percentages based on January, 1919.	
				Employees.	Pay roll.
1919.					
January	117	31,898	$1,833,392	100	100
February		31,387	1,600,386	98	87
March		30,164	1,522,212	95	83
April		29,009	1,451,103	91	79
May		29,021	1,544,639	91	84
June		30,208	1,597,565	95	87
July		31,136	1,690,149	98	92
August		31,035	1,779,561	97	97
September		30,811	1,844,546	97	101
October		31,321	2,055,289	98	112
November		[1]	[1]	[1]	[1]
December		[1]	[1]	[1]	[1]
1920.					
January	93	33,735	2,218,630	106	121
February		32,299	2,066,369	101	113
February	85	25,362	1,701,707	101	113
March		27,029	1,810,080	108	120
March		24,567	1,682,296	108	120
April		23,499	1,554,551	103	111

[1] Because of the strike some mines were idle and others running with a small force; hence no figures are shown for these months.

INDUSTRIAL ACCIDENTS.

Influence of the War on Accident Rates in the Iron and Steel Industry, 1914-1919.[1]

By LUCIAN W. CHANEY.

FOR a very long time to come the question of influence of the World War upon our social and industrial life will be a subject of earnest debate.

It is accordingly appropriate to devote this article to presenting some illustrations which seem most clearly to indicate the result which war conditions have tended to produce upon accident rates.

The first case to be considered is that of a group of mills which have been combined because they afford opportunity both to determine severity rates and to examine the movement of such rates in considerable detail. These mills are largely devoted to the fundamental departments of the industry, namely, blast furnaces, steel works, and rolling mills. They employed in the years covered (1914 to 1919) men varying in number from 35,000 to 50,000. The size of the group is accordingly sufficient to assume that the results obtained are fairly typical.

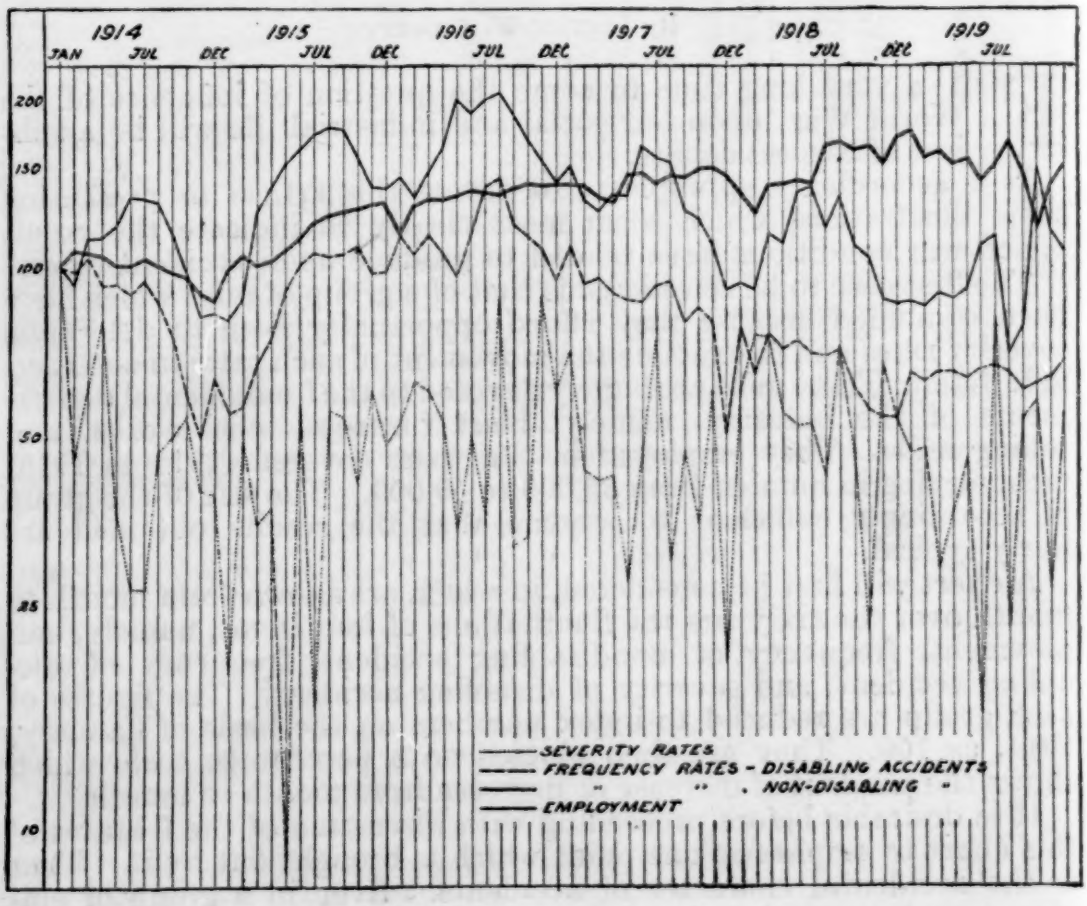
A chart will first be considered, in which are shown from month to month over the six years the fluctuations of four items, namely, employment, frequency of nondisabling accident, frequency of disabling accident, and severity of disabling accident. The figures of each group are reduced to index numbers on the basis of January, 1914, as 100. They are then plotted on a percentage scale which shows the per cent of increase or decrease from month to month.

It is desirable before proceeding with discussion of the features of this chart to emphasize one point which is brought out by it. That is the accidental character of accidents. Even in a group of employees as large as the present one it will be found that general conclusions which seem to be fully warranted are flatly contradicted by a great number of special cases. Accidents in their very nature depend on combinations of circumstances which might never occur twice. It is the unexpected which gives character to accidental happenings. This is true in some measure of all types of accidents, but particularly is it true of those which involve death or serious injury. It would be expected therefore that just such fluctuations as those recorded between the months would occur. The fact that there is not the same regularity as that found in other statistical fields does not in the least imply imperfection in the basic data nor error in the treatment.

[1] This article is from a bulletin on Causes and prevention of accidents in the iron and steel industry, now in preparation by the Bureau of Labor Statistics.

If employment be considered it will become evident that it proceeded on a fairly level keel during the first eight months of 1914. It is known from other sources of information that this was a considerably lower level than for the year 1913, which was a year of particularly high activity in the industry. There is then a further decline from which recovery begins with 1915. This increase continues with some unsteadiness until a maximum is reached in the month of

CHART A.—FLUCTUATIONS FROM MONTH TO MONTH OF SEVERITY RATES, OF FREQUENCY RATES FOR DISABLING AND NONDISABLING ACCIDENTS, AND OF EMPLOYMENT, 1914 TO 1919.



January, 1919. From that point there is a general tendency to decline.

Turning now to nondisabling accidents, it will appear that while they are doubtless influenced by the changes in employment they are more responsive to other and more obscure factors. When employment is at the lowest point this class of accidents is also at a low point. From January, 1915, there is an irregular rise, more rapid than the rise in employment, until August, 1916, from which there is a decline with some upward movements in each year.

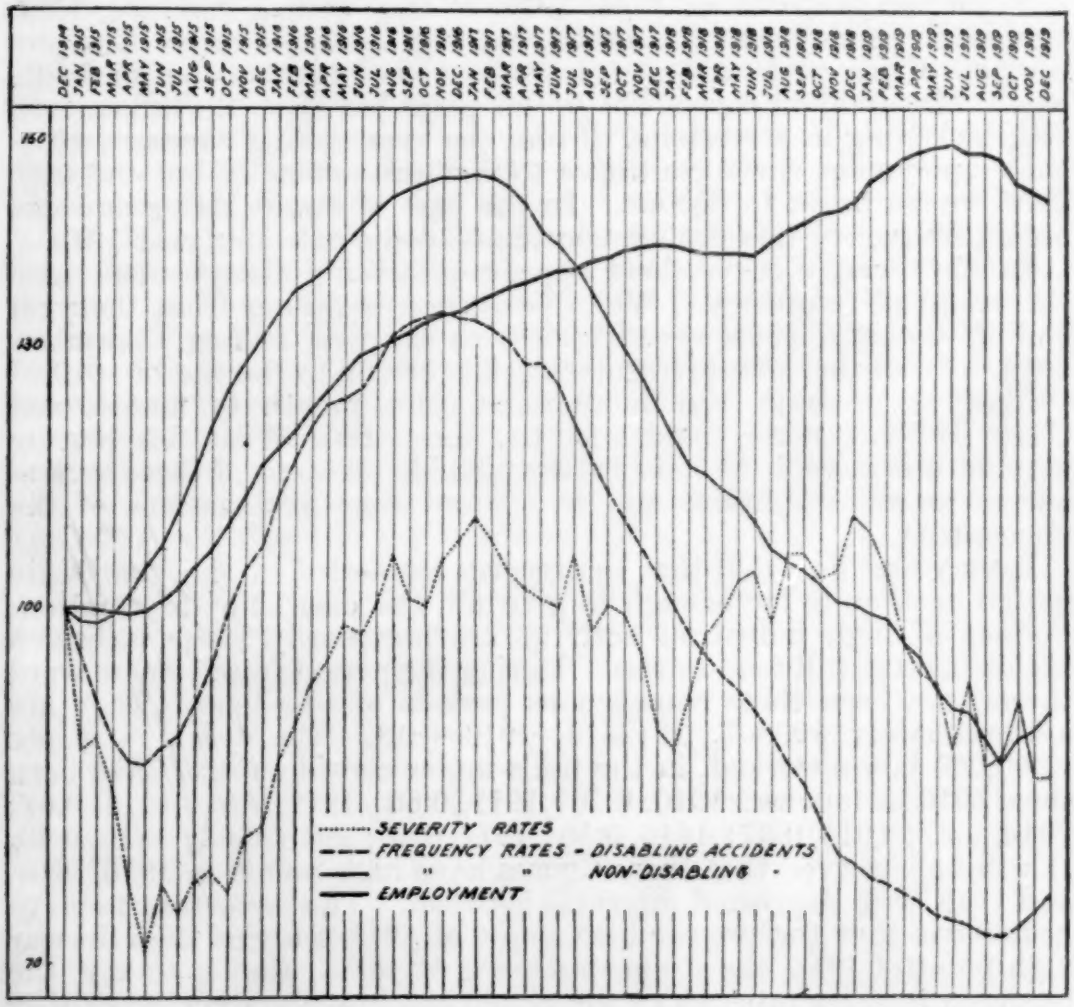
The frequency of disabling accidents runs a somewhat similar course but nowhere departs so widely from January, 1914, as do nondisabling accidents. The high month is August, 1916, from which point there is an irregular decline.

The severity of disabling accidents is much more irregular from month to month and nowhere reaches a level as high as that of Jan-

uary, 1914. The high months are August and November, 1916, February, March, and August, 1918, and July, 1919. This irregularity and the frequent departure from the showing regarding frequency is entirely normal in view of the fact that the comparatively small number of deaths have a controlling influence on the severity rates and the deaths are not distributed regularly.

Chart A shows the percentage variations which occur from month to month. It is desirable to present the same data in a form in which

CHART B.—TREND OF SEVERITY RATES, OF FREQUENCY RATES FOR DISABLING ACCIDENTS, OF FREQUENCY RATES FOR NONDISABLING ACCIDENTS, AND OF EMPLOYMENT, 1914 TO 1919.



the irregularities are "smoothed" and the general trend of events made evident without the confusion due to temporary conditions.

In Chart B the rates are cast up for the years ending with each month, beginning with December, 1914. Each point in the curves resulting from plotting these values therefore represents an entire year and the irregularities seen in Chart A are in a measure eliminated.

A study of Chart B reveals that there was a slight downward trend in employment during the early portion, accompanied by downward movements in each of the three accident curves. This was most pronounced in severity of disabling accident, less so in frequency of disabling cases, and least in nondisabling cases.

Then, from the year ending June, 1915, to that ending June, 1916, employment was rapidly increasing. Each of the accident curves rises with the employment curve, the three pursuing nearly parallel courses, and both frequency curves rising more rapidly than the employment curve. It is known from other studies of the situation that this upward movement in employment involved a high accession rate of men new to the business. The huge demand for steel, which came with the opening of the war, led to taking on any man who offered himself and seemed capable for the physical demands of the task. Such a high accession rate of inexperienced men is always accompanied by increasing accident rates.

From the year ending June, 1916, to that ending January, 1917, the rise in employment continued, but at a less rapid rate. The proportion of inexperienced men introduced is known to be markedly less. The accident curves rise to this point but show the influence of the slackening in accessions. From the year ending January, 1917, the employment curve continues to rise quite steadily but the accident curves begin to decline. In the case of nondisabling and disabling frequency this decline continues to the calendar year 1919.

In the severity curve there appears a striking disagreement with the trend of frequency. While frequency is falling from the year ending January, 1918, severity rises to the year ending December, 1918. From that point irregular decline occurs to the end of 1919.

Chart A presents the fluctuations from month to month and Chart B the general trend over the six years. With this picture in mind it is possible to consider the possible relations of these several curves to war conditions and to suggest some explanations of the phenomena.

It may first be noted that the records embodied in the charts do not go back quite far enough to give all the desirable information. Periods of high industrial activity are necessarily those in which accident rates will tend to rise. During the period from 1906 onward there have been three conspicuous periods of this kind. They are approximately 1906–7, 1912–13, 1916–1918. The death rates per 1,000,000 hours worked, in the mills under consideration, have been since 1910 as follows: 1910, 0.70; 1911, 0.60; 1912, 0.63; 1913, 0.67; 1914, 0.47; 1915, 0.37; 1916, 0.50; 1917, 0.40; 1918, 0.53; 1919, 0.40. It will be observed that these figures have high points in 1910, 1913, and 1918, with depressed intervals between. The important point to be noted is that the prewar high point of 1913 is higher than the war high point of 1918, the proportion being 67 to 53; that is to say, the tendency to rising rates which war conditions brought about was either opposed by more effective safety measures or was intrinsically less than that existing in the prewar period. It may fairly be urged that the explanation is to be found in the improved construction of the new buildings and machinery which were installed in response to the war demand and in the active efforts put forth in training and introducing the new man who had to be employed.

A considerable number of industrial concerns took the position that the demands of war production were so imperative that they were perfectly justified in relaxing attention to safety measures of all sorts. The result is reflected in the increased accident occurrence registered by most agencies. Whether or not this increase brought the rates

generally above the prewar standard is a matter which can not be determined with certainty. It is to the great and lasting credit of the iron and steel industry that it did meet the situation directly and endeavored to combat the inevitable tendency by increased efforts. The final outcome of these various efforts was first to check the rising accident rates and finally to bring them down to points lower than the prewar level.

It is now pertinent to examine the contradiction noted above between the indications afforded by the frequency rates and severity rates for the years ending in the months of 1918. In this portion of the charts, frequency rates both for disabling and nondisabling accidents show a tendency to decline while severity is rising. This condition is of interest from several standpoints. It has often been noted that frequency and severity rates give these opposite indications; indeed, this fact was the moving reason for working out the system of severity rates. It is not often, however, that the contradiction is as pronounced and long continued as in this case. It is clear that the efforts of one sort and another which kept severity below the rate of 1913 and produced a marked decline of frequency after 1916 were after all not so well adapted to meet the severity problem as they were to deal with the problem of minor injury. Severity, it is true, did decline for a time concurrently with frequency but then took a turn in the opposite direction, which continued until the close of the calendar year 1918. From that point the curve again concurs with that of frequency. The extent to which minor injury was controlled in 1918 and the failure equally well to control the severer forms is strikingly brought out by contrasting the years 1915 and 1918, as is done in the following table:

FREQUENCY AND SEVERITY RATES FOR THE MONTHS OF 1915 AND 1918.

Month.	Frequency rates (per 1,000,000 hours exposure).		Severity rates (per 1,000 hours exposure).		Month.	Frequency rates (per 1,000,000 hours exposure).		Severity rates (per 1,000 hours exposure).	
	1915	1918	1915	1918		1915	1918	1915	1918
January	32.4	45.7	1.4	4.3	August	61.5	41.6	4.2	5.3
February	33.3	37.8	3.6	5.6	September	62.1	35.7	4.0	3.4
March	39.7	44.6	2.6	5.6	October	63.9	32.5	3.0	1.7
April	44.1	41.5	2.8	4.1	November	57.3	31.6	4.5	5.0
May	53.3	43.5	.6	3.9	December	57.8	31.5	3.6	4.0
June	59.3	41.0	4.3	3.9					
July	62.7	40.5	1.2	3.1	Total	53.2	38.8	3.0	4.1

Inspection of this table will disclose that 9 of the 12 months of 1915 have higher frequency rates than the same months of 1918. On the contrary, 1918 shows higher severity in 9 of the 12 months. Evidently the conditions of the two years were in some way distinctly different. Superficially the differences appear to be that 1915 was a year of rapid changes in the working force and that 1918 was one of relative stability of the workers but of intense industrial activity. In the first condition it is clear that all accident rates tend to rise rapidly. It is the uniform experience that whenever the accession of inexperience is increasing the accident rates tend

strongly to go up, and will do so unless very rigorous measures are taken in opposition.

A reasonable explanation of the rising severity of the years ending in 1918 is much less easy. The greater industrial activity of that year must have had its influence, but knowledge of the plants does not seem to justify placing any great stress upon that factor. The operations of such mills as are here grouped are necessarily of a rather leisurely character and can not in the nature of the case be hurried sufficiently to increase greatly the hazard of the individual man.

It has been suggested that the "flu" epidemic may have so influenced the physical condition of the men that they were more liable to accidental injury. This can scarcely be given great weight, since, though the severity rate of the months when "flu" was most prevalent is higher than the average, it is not higher than that in several other groups of months in which there was no "flu" complication.

This process of exclusion rather forces the conclusion that this is another case where the operators of these mills were led into a mistaken sense of security by the steadily falling frequency rates and so did not maintain full and rigorous attention to the causes of more severe injury. At all events it may be said that without constant attention to the severity rate it is impossible to have an accurate idea of the conditions which must be met.

The rates which form the basis of the foregoing charts and discussion are given in the following tables:

ACCIDENT RATES, BY MONTHS, 1914 TO 1919.

Month.	1914	1915	1916	1917	1918	1919
	Frequency rates of nondisabling accidents (per 1,000,000 hours exposure).					
January	203	164	293	306	189	175
February	190	178	268	265	186	171
March	229	252	300	254	232	182
April	228	281	329	272	223	178
May	239	309	404	303	276	186
June	270	327	381	332	281	220
July	267	349	404	317	238	230
August	263	360	418	311	269	141
September	234	358	377	254	221	157
October	199	317	341	244	211	302
November	165	281	315	223	177	234
December	167	279	285	185	173	215
Total	222	292	343	272	223	203
	Frequency rates of disabling accidents (per 1,000,000 hours exposure).					
January	59.0	32.4	66.4	63.8	45.7	37.9
February	57.7	33.3	62.0	54.9	37.8	36.5
March	61.3	39.7	67.2	56.3	44.6	38.1
April	54.5	44.1	62.1	52.9	41.5	38.0
May	54.9	53.3	56.5	51.7	43.5	37.0
June	53.0	59.3	67.0	50.8	41.0	38.5
July	55.6	62.7	81.7	54.6	40.5	39.0
August	51.1	61.5	84.7	55.5	41.6	37.9
September	44.4	62.1	69.7	46.5	35.7	35.2
October	34.9	63.9	66.7	49.6	32.5	36.2
November	29.4	57.3	63.1	46.6	31.6	37.3
December	37.5	57.8	55.8	35.6	31.5	39.9
Total	50.0	53.2	66.9	51.5	38.8	37.7
	Severity rates of disabling accidents (per 1,000 hours exposure).					
January	7.5	1.4	3.9	5.3	4.5	3.5
February	3.4	3.6	4.6	3.2	5.6	3.5
March	4.6	2.6	4.5	3.1	5.6	2.2
April	5.9	2.8	3.9	3.2	4.1	2.7
May	2.7	.6	2.5	2.1	3.9	3.4
June	2.0	4.3	3.7	3.5	3.9	1.2
July	2.0	1.2	2.7	5.5	3.1	6.0
August	3.5	4.2	6.5	2.2	5.3	1.7
September	3.7	4.0	2.4	3.5	3.4	4.0
October	4.0	3.0	2.5	2.6	1.9	4.3
November	3.0	4.5	6.6	4.4	5.0	2.0
December	2.9	3.6	4.5	1.5	4.0	4.1
Total	3.8	3.0	4.0	3.3	4.1	3.2

ACCIDENT RATES, BY YEARS ENDING WITH EACH MONTH.

Year ending with—	Rates for year ending with specified month.					
	1914	1915	1916	1917	1918	1919
	Frequency rates of nondisabling accidents (per 1,000,000 hours exposure).					
January	.....	219	299	344	263	221
February	.....	218	307	343	256	219
March	.....	220	310	339	255	215
April	.....	225	314	334	251	211
May	.....	231	322	326	248	205
June	.....	237	327	322	243	201
July	.....	245	332	315	236	200
August	.....	255	337	306	233	195
September	.....	267	339	296	230	189
October	.....	277	341	288	227	195
November	.....	285	343	280	223	196
December	222	292	343	272	223	200
	Frequency rates of disabling accidents (per 1,000,000 hours exposure).					
January	.....	47.8	55.8	66.7	50.0	38.2
February	.....	45.6	58.0	66.1	48.6	38.0
March	.....	43.7	60.1	65.2	47.7	37.6
April	.....	42.7	61.4	63.7	46.8	37.3
May	.....	42.7	61.5	63.9	46.1	36.7
June	.....	43.4	62.2	62.5	45.2	36.5
July	.....	44.2	63.8	60.3	44.0	35.3
August	.....	45.4	65.8	58.0	42.8	36.0
September	.....	47.1	66.4	56.1	41.8	35.9
October	.....	49.6	66.7	54.6	40.3	36.3
November	.....	51.7	67.2	53.2	39.1	36.7
December	50.0	53.2	66.9	51.5	38.8	37.5
	Severity rates of disabling accidents (per 1,000 hours exposure).					
January	.....	3.3	3.2	4.1	3.3	4.1
February	.....	3.3	3.3	4.0	3.5	3.9
March	.....	3.1	3.5	3.9	3.7	3.6
April	.....	2.9	3.6	3.8	3.7	3.5
May	.....	2.7	3.7	3.8	3.9	3.5
June	.....	2.9	3.7	3.8	3.9	3.3
July	.....	2.8	3.8	4.0	3.7	3.5
August	.....	2.9	4.0	3.7	4.0	3.2
September	.....	2.9	3.8	3.8	4.0	3.2
October	.....	2.8	3.8	3.7	3.9	3.4
November	.....	3.0	3.9	3.6	3.9	3.2
December	3.8	3.0	4.0	3.3	4.1	3.2

Departments of the Industry Manufacturing Various Products.

THE foregoing discussion illustrates the trend of accident rates in the basic departments of the industry. It will be of interest to determine whether the same forces were at work in other departments and to what extent the results were the same.

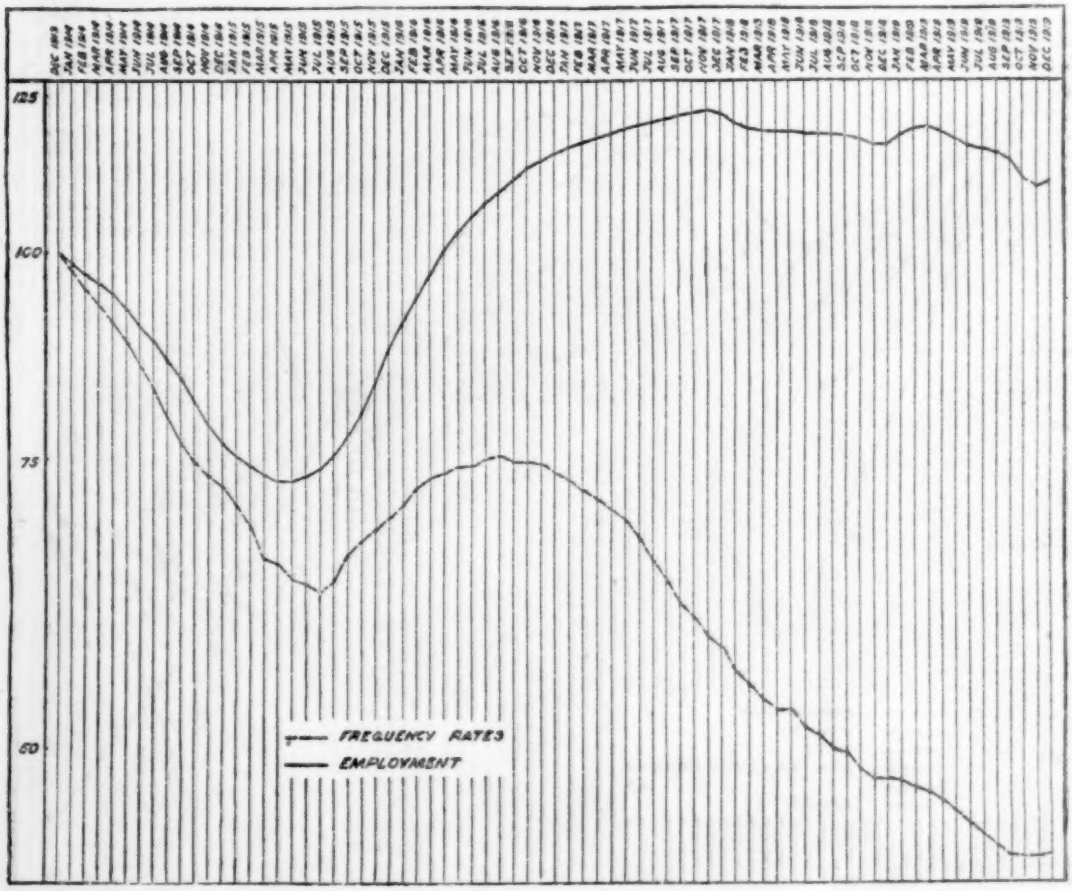
The plants for which it is possible to follow the details of war-time experience employed during the seven years which are covered a number of men varying from 110,000 to 186,000. The groups into which this total will be analyzed in seeking to determine the war-time experience in manufacturing various products are sufficiently

large to afford reasonable confidence that they represent typical conditions.

Chart C exhibits the trend of employment and of accident frequency rates in the entire group of plants from the year ending December, 1913, to that ending December, 1919.

The year 1913 as before noted was one of high industrial activity. Both in that particular and in the matter of accident rates the year formed a peak in the curves representing conditions. Following 1913 employment declined to the year ending May, 1915, and accident

CHART C.—TREND OF FREQUENCY RATES AND OF EMPLOYMENT FOR THE IRON AND STEEL INDUSTRY, 1913 TO 1919.

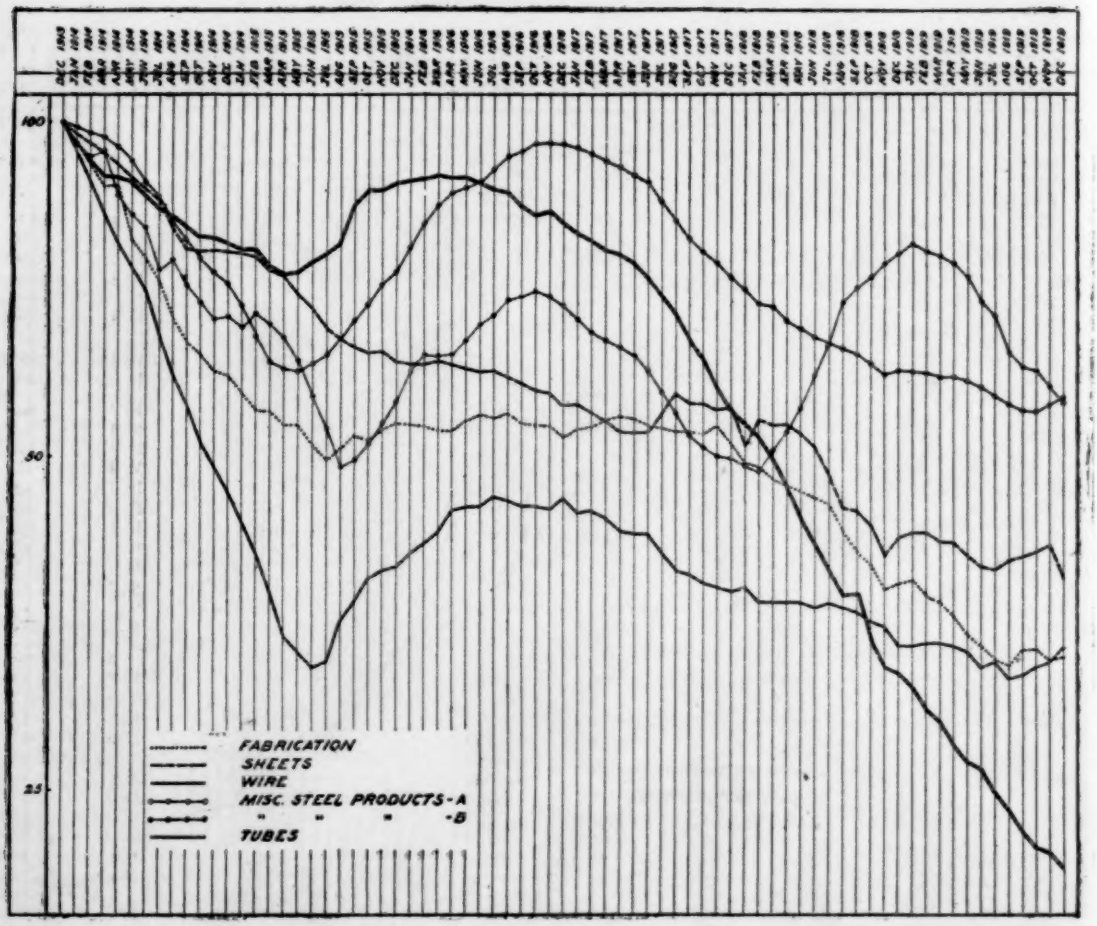


rates to the year ending July, 1915. Employment was increasing from that year until that ending November, 1917. A decline then began which was still in progress in the year ending December, 1919. Accident frequency increased from the year ending July, 1915, to the year ending August, 1916, and then while employment was still rising began to decline and continued so to do to the year ending December, 1919. It will be seen that this was in substantial agreement with what happened in the smaller group already considered.

The component parts of this total are presented in Chart D. It presents two groups of mills which produce miscellaneous steel products and one group each of mills producing sheets and tin plate, wire products, tubes, and fabricated products.

Five of the six show a declining accident frequency to a year ending in some month about the middle of 1915. The sheet mills are unique among these production groups in that they show a declining accident frequency with only minor irregularities from the year ending December, 1913, to the year ending December, 1919. The other five groups have a rising frequency rate from a year ending near the middle of 1915 to a year ending with some month in 1916, varying from March to December. From that point there is a

CHART D.—TREND OF FREQUENCY RATES IN THE MANUFACTURE OF SPECIFIED PRODUCTS, 1913 TO 1919.



continuous, though not perfectly regular, decline to the year ending December, 1919, except in one case. One of the two groups which produce miscellaneous steel products has a second low point in the year ending February, 1918, from which a rise occurs until the year ending January, 1919. The second peak is slightly higher than the first.

It is evident that in all essential particulars the experience of these diverse production groups is the same as that in the fundamental departments. The rate tables on which the charts are founded follow.

FREQUENCY RATES PER 1,000,000 HOURS EXPOSURE FOR SPECIFIED PRODUCTS.

Year ending with—	Fabricated products.	Sheets.	Wire products.	Tubes.	Miscellaneous steel products.		Total.
					Group A.	Group B.	
December, 1913	100.3	61.6	59.3	27.2	70.9	41.3	60.3
January, 1914	96.2	59.9	56.5	25.6	70.1	39.4	58.7
February, 1914	92.2	58.9	54.7	24.0	69.3	38.5	57.3
March, 1914	87.9	57.7	53.1	22.5	68.6	38.9	56.1
April, 1914	88.2	56.6	53.1	21.2	67.3	35.3	54.7
May, 1914	78.7	55.0	52.5	20.1	65.5	34.2	53.2
June, 1914	75.5	53.7	51.0	19.1	62.8	33.3	51.6
July, 1914	71.9	52.4	49.6	17.3	60.6	30.4	49.9
August, 1914	66.7	49.4	48.9	16.0	57.8	31.0	47.9
September, 1914	63.2	47.4	48.0	15.0	55.7	29.4	46.3
October, 1914	61.6	47.2	46.8	13.9	53.5	28.4	45.0
November, 1914	59.5	47.3	46.7	13.2	51.8	27.4	44.0
December, 1914	59.0	47.2	46.2	12.5	50.7	27.6	43.5
January, 1915	57.0	46.9	45.4	11.8	48.4	26.9	42.4
February, 1915	55.1	46.6	45.4	11.1	45.4	27.7	41.0
March, 1915	55.0	45.1	43.7	10.2	43.5	27.1	39.3
April, 1915	53.3	44.7	43.2	9.3	42.3	26.4	39.1
May, 1915	53.3	43.0	43.3	9.0	42.1	25.1	38.3
June, 1915	51.2	41.8	44.3	8.7	42.7	23.3	38.0
July, 1915	49.3	40.0	45.1	8.8	43.5	21.8	37.6
August, 1915	50.9	39.0	46.2	9.6	45.0	20.1	38.1
September, 1915	52.2	38.5	49.9	10.0	46.8	20.4	39.5
October, 1915	51.8	38.0	51.4	10.5	48.5	21.0	40.3
November, 1915	53.0	38.1	51.5	10.7	50.4	22.1	40.9
December, 1915	53.5	37.3	52.4	10.8	51.9	23.0	41.5
January, 1916	53.4	37.0	52.6	11.1	54.7	24.5	42.4
February, 1916	53.3	37.0	52.8	11.3	57.5	25.4	43.3
March, 1916	52.8	37.3	53.3	11.6	59.8	25.3	43.9
April, 1916	52.7	37.1	52.9	12.1	61.2	25.4	44.2
May, 1916	53.9	36.8	52.9	12.2	62.0	26.1	44.6
June, 1916	54.5	36.5	52.2	12.2	62.7	27.0	44.7
July, 1916	54.1	36.6	51.5	12.4	64.3	27.5	45.1
August, 1916	54.7	36.1	51.1	12.3	66.0	28.5	45.4
September, 1916	53.5	35.7	49.7	12.2	66.7	28.7	45.2
October, 1916	53.4	35.2	48.9	12.2	67.6	29.0	45.0
November, 1916	52.4	34.9	49.3	12.1	67.9	28.7	44.9
December, 1916	52.1	34.0	48.2	12.4	67.6	28.2	44.4
January, 1917	52.9	34.1	47.1	12.0	67.2	27.4	43.9
February, 1917	53.1	33.6	46.4	12.1	66.5	26.6	43.4
March, 1917	54.0	33.1	45.5	11.9	65.5	26.2	42.8
April, 1917	54.3	32.3	45.0	11.6	64.6	25.8	42.2
May, 1917	54.0	32.2	44.2	11.5	63.6	25.3	41.6
June, 1917	53.3	32.3	42.6	11.5	62.2	24.5	40.5
July, 1917	53.1	33.6	41.0	11.1	60.2	23.5	39.4
August, 1917	52.7	34.9	39.5	10.7	57.9	22.5	38.3
September, 1917	52.7	34.2	37.2	10.6	55.8	21.5	37.0
October, 1917	52.5	34.2	36.0	10.4	54.2	21.0	36.2
November, 1917	53.2	33.8	33.9	10.3	52.9	20.6	35.3
December, 1917	51.3	33.9	32.5	10.2	51.3	20.5	34.5
January, 1918	49.1	32.0	31.6	10.3	49.9	20.1	33.6
February, 1918	48.7	33.1	30.7	10.0	48.6	20.0	32.9
March, 1918	47.4	32.7	29.1	10.0	47.6	20.8	32.3
April, 1918	46.9	32.7	27.6	10.0	46.7	21.6	31.9
May, 1918	46.3	32.3	25.8	10.0	46.0	22.7	31.8
June, 1918	45.7	31.3	24.6	9.9	45.2	24.3	31.1
July, 1918	45.1	29.4	23.4	10.0	44.5	25.9	30.7
August, 1918	42.6	27.5	22.1	9.9	44.0	28.3	30.2
September, 1918	40.8	27.4	21.2	9.8	43.5	29.2	29.9
October, 1918	40.0	26.5	19.9	9.6	42.6	29.9	29.2
November, 1918	37.8	24.9	19.0	9.5	41.7	30.7	28.9
December, 1918	38.2	25.9	18.8	9.1	42.0	31.4	28.8
January, 1919	38.5	26.1	18.2	9.1	41.9	32.1	28.9
February, 1919	37.3	26.1	17.4	9.2	41.8	31.5	28.6
March, 1919	36.8	25.7	17.0	9.2	41.5	31.2	28.3
April, 1919	35.8	25.6	16.2	9.1	41.5	30.7	28.1
May, 1919	34.4	24.9	15.7	9.0	41.1	29.9	27.6
June, 1919	33.6	24.4	15.4	8.7	40.7	28.4	27.1
July, 1919	32.7	24.2	14.7	8.8	40.0	27.6	26.7
August, 1919	32.3	24.7	14.2	8.5	39.2	25.5	26.2
September, 1919	33.3	24.8	13.5	8.6	38.8	24.7	25.9
October, 1919	33.3	25.1	13.1	8.7	38.7	24.5	25.9
November, 1919	32.6	25.5	12.9	8.8	39.2	23.7	26.0
December, 1919	32.8	23.8	12.5	9.1	39.7	23.0	26.1

FREQUENCY RATES PER 1,000,000 HOURS EXPOSURE FOR SPECIFIED PRODUCTS—Concluded.

Number of workers.

Year ending with—	Fabricated products.	Sheets.	Wire products.	Tubes.	Miscellaneous steel products.		Total.
					Group A.	Group B.	
June, 1914	8,817	16,841	25,575	19,944	41,744	18,922	137,816
June, 1915	6,706	15,759	22,434	13,329	35,670	13,477	111,794
June, 1916	8,276	21,906	31,377	21,031	45,673	23,000	160,819
June, 1917	10,110	25,504	32,928	24,880	49,893	27,046	182,587
June, 1918	10,349	25,939	30,393	23,787	50,803	28,289	180,204
June, 1919	9,904	22,685	29,324	23,871	50,652	26,906	176,867

Fluctuation in Rates for Causes.

IT HAS been shown that certain very definite characteristics can be traced in the curves which represent the trend of accident rates over the war period. It is possible to examine the situation from another point of view. If the rates for the various causes be determined it will be possible to observe whether the indications from the groupings already presented are repeated in the various cause groups.

The following table shows the main cause groups:

ACCIDENT FREQUENCY RATES PER 1,000,000 HOURS EXPOSURE, IN THE IRON AND STEEL INDUSTRY, BY CAUSES.

Cause.	1913	1914	1915	1916	1917	1918	1919
Working machines	3.8	2.7	2.6	2.6	2.0	1.8	1.4
Cranes	3.5	2.3	2.3	2.8	2.5	2.2	1.9
Vehicles	2.3	1.9	1.6	1.7	1.7	1.3	1.2
Hot substances	5.4	3.6	3.7	4.5	3.6	3.0	2.8
Falls of person	4.5	4.1	3.5	3.7	3.2	2.8	2.8
Falling material, not otherwise specified	1.2	.7	.7	.6	.4	.3	.4
Handling tools and material	26.7	19.4	20.6	21.5	15.7	12.8	11.7
Other causes	12.9	8.8	6.5	7.0	5.4	4.6	4.1
Total, all causes	60.3	43.5	41.5	44.4	34.5	28.8	26.3

It will be found that in practically all the cause groups there is a decrease after 1913 into the years 1914 and 1915, followed by increase to a peak in 1916, followed by further decline. The handling of tools and material produces more accidents than any other single group of causes. The rates per 1,000,000 hours exposure for each year beginning with 1913 are 26.7, 19.4, 20.6, 21.5, 15.7, 12.8, and 11.7. Inspection of this series discloses the characteristic high point in 1916.

It is possible to recapitulate and summarize the facts of the war period and the explanations which may be offered of the course of events. It may be noted that—

1. Whatever form of classification is used (the fundamental departments, production groups, or cause groups) the same trend is shown.

2. The period just prior to the war was a period of industrial decline. Employment went down, "labor mobility" almost ceased. Accident rates dropped more rapidly than employment.

3. As soon as the effect of European war orders began to be felt in this country employment began to increase. The accession of inexperienced men increased even more rapidly. Accident rates went up.

4. The iron and steel industry was alarmed by the increasing accident occurrence and undertook a strenuous counter campaign.

5. This was very successful in controlling and finally causing a decline in minor injury.

6. Major injury was not controlled so perfectly but was prevented from rising above the level of 1913 and was finally considerably reduced.

This review of the war period strongly supports the contention that even in the most strenuous times it is possible to hold in check the tendency to rising accident rates by the application of the three cardinal methods of the safety movement: (1) Adequate instruction of the men in skillful methods of work; (2) careful supervision of the well-instructed men; (3) "engineering revision," by which the safety of work places is increased.

Coal-Mine Accidents in the United States in Six Months Ending January, 1920.

ACCORDING to a statement recently issued by the United States Bureau of Mines, there was a gratifying decrease in the number of men killed in the coal mines of the United States during the six months ending January, 1920, as compared to the quantity of coal produced.

During July last year, when 221 men lost their lives, the production of coal was over 50,000,000 tons. In January, 1920, the production had increased to 56,000,000 tons, or 12 per cent, while the fatalities, instead of increasing proportionately, actually decreased to 188, or nearly 15 per cent. Nor is this decrease a mere accident or coincidence peculiar to the month of January, as may be seen from the following table:

PRODUCTION OF COAL, NUMBER OF FATALITIES, AND FATALITIES PER MILLION TONS MINED, IN COAL MINES OF UNITED STATES, JULY, 1919, TO FEBRUARY, 1920.

Month.	Production (short tons).	Men killed.	Number killed per million tons.
July, 1919	50,501,000	221	4.38
August, 1919	50,805,000	223	4.39
September, 1919	54,735,000	179	3.27
October, 1919	64,702,000	243	3.76
November, 1919	26,389,000	94	3.56
December, 1919	44,527,000	169	3.80
January, 1920	56,043,000	188	3.35

From the figures shown above it may be observed that the average monthly production for January and the five months immediately preceding was 49,500,000, or only 2 per cent below that for July, while the average number of men killed was 183, or a decrease of over 17 per cent.

The month of July, 1919, has been used as the base for this comparison because it is fairly representative of the average number of men killed each month since 1911. It will be noted that during the six months ending with January, 1920, the accidents have by no means kept pace with the increasing production of coal, and that during the coal strike last November the decline in the output of coal was accompanied by an even greater decline in the number of lives lost.

Metal-Mine Accidents in the United States During 1918.

THE RECENT report of the United States Bureau of Mines on Metal-mine accidents in the United States during the calendar year 1918 (Technical Paper 252) opens with the statement that the returns for the year show the lowest fatality rate recorded since the bureau began the collection of accident statistics in 1911, and that the number of nonfatal injuries was slightly less than in 1917 in spite of war conditions and labor shortage. Reports from 3,636 operators (about 1,000 less than in 1917) give a total of 182,606 employees as compared with 200,579 in 1917. In addition, the metallurgical works (not including iron and steel) reported 79,752 men in 1918 as compared with 84,042 in 1917.

There were 646 fatalities in metal mines in 1918; in 1917 there were 852. The fatality rate in 1918 is 3.57 per 1,000 300-day workers as compared with the normal rate of 3.60 for 1917 and 3.62 for 1916. The 1918 rate, it is stated, is the lowest recorded since 1911, when it was 4.45.

The report shows a total of 42,915 nonfatal injuries at metal mines, which is a decrease of 3,371 from 1917, the accident rate being 237.09 per 1,000 300-day workers as compared with 240.97 in 1917, and 250.64 in 1916.

The tables in the report represent the five divisions of the mining industry, as follows: Copper mines, 524 operators; gold, silver, and miscellaneous mines, 2,429 operators; iron mines, 176 operators; lead, and zinc mines (Mississippi Valley), 236 operators; nonmetallic mineral mines (not including coal), 271 operators.

It is explained that as many of the States now have compensation laws the bureau's classification of serious and slight injuries is on a 14-day (2 week) basis in order to conform to the classification used by the States. The classification of injuries includes three types, as follows:

FATAL, SERIOUS, AND SLIGHT INJURIES IN METAL MINES IN THE UNITED STATES IN 1917 AND 1918.

Injury.	1917	1918	Per cent of decrease.
Fatal	852	646	24.2
Serious (time lost more than 14 days):			
Permanent disability—			
Total[1]	39	62	[2]58.9
Partial[3]	666	640	3.9
Others	10,220	9,066	11.3
Slight (time lost, 1 to 14 days, inclusive)	35,361	33,147	6.3
Total	46,286	42,915	7.3

[1] Permanent total disability is loss of both legs or arms, one leg and one arm, total loss of eyesight, paralysis, or other condition permanently incapacitating the workman from engaging in a gainful occupation.
[2] Increase.
[3] Permanent partial disability means loss of one foot, leg, hand, eye, one or more fingers, one or more toes, any dislocation where ligaments are severed, or any other injury known in surgery to be permanent partial disability.

The following table shows the number of employees, the number of fatalities and injuries, and the fatal and nonfatal accident rates, by kind of mine, during 1917 and 1918.

NUMBER EMPLOYED, NUMBER KILLED AND INJURED, AND FATAL AND NONFATAL ACCIDENT RATES IN MINES DURING THE YEARS 1917 AND 1918.

Kind of mine.	Active operators.	Number of men employed.	Average days worked.	Number killed.	Number injured (time lost more than 1 day).	Number 300-day workers.	Killed per 1,000 300-day workers.	Injured per 1,000 300-day workers.
1917.								
Copper	649	61,275	312	374	19,935	63,619	[1]5.88	313.35
Gold, silver, and miscellaneous metal	3,166	51,892	281	196	8,385	48,606	4.03	172.51
Iron	205	57,230	283	191	12,278	53,960	3.54	227.54
Lead and zinc (Mississippi Valley)	369	20,269	246	68	4,544	16,644	4.09	272.99
Nonmetallic mineral	248	9,913	280	23	1,144	9,256	2.48	123.58
Total	4,627	200,579	287	852	46,286	192,085	4.44	240.97
1918.								
Copper	524	59,447	321	220	20,513	63,681	3.45	322.12
Gold, silver, and miscellaneous metal	2,429	43,643	197	181	7,847	42,375	4.27	185.18
Iron	176	53,665	290	179	9,621	51,878	3.45	185.45
Lead and zinc (Mississippi Valley)	236	14,004	251	47	3,746	11,723	3.58	319.54
Nonmetallic mineral	271	11,847	287	19	1,188	11,349	1.67	104.69
Total	3,636	182,606	297	646	42,915	181,006	3.57	237.09

[1] Excluding the deaths from the North Butte mine fire, the fatality rate was 3.34 per 1,000, the lowest on record for the copper group.

The causes of accidents are shown in the report in considerable detail. Comparative data for accidents at metal mines, coal mines, and quarries are given.

INDUSTRIAL POISONS.

Tellurium as an Industrial Health Hazard.

A STUDY of tellurium was recently made by Dr. Shie and Dr. Deeds, of the United States Public Health Service; the results were published in Public Health Reports (Apr. 16, 1920, pp. 939–954), in a preliminary report, the purpose of which is "to invite the attention of industrial hygienists and physicians to the importance of tellurium as an industrial health hazard."

The possibility that this substance might act as an industrial poison first came to the attention of the authors in 1918 while they were making a study of lead poisoning in an electrolytic lead refinery. It was noted that practically all the men employed in one department—13 in number—smelled strongly of garlic and, upon being questioned, complained of dry skin and a loss of the sweat function. These men were working in the silver refinery around blast furnaces and were subjected to high temperatures. The slime from the electrolytic tanks was treated to remove the Doré metal, and tellurium was encountered as an impurity. The temperature attained in the blast furnaces was about 1,200°–1,400° F., and tellurium fumes were given off probably in the form of hydrogen telluride, a compound analogous to sulphuretted hydrogen and arseniuretted hydrogen. Tellurium was also present in the dust about the furnaces, probably in the form of the oxide and telluride. No other men in the plant complained of similar symptoms, and no others came into contact with tellurium.

The 13 men were examined with the following result: Seven showed evidences of tellurium absorption as indicated by garlic odor to the breath, sweat, and urine, to dryness of the mouth, and metallic taste. Five of these had a considerable inhibition of the sweat function, and the two who did not, had worked only two weeks; three of the five had a dry, itching skin, anorexia, nausea, some vomiting, and some degree of depression or somnolence. Six of the men examined had a rash distributed quite generally over the body, and "it is probable that the dry skin, incident to the complete or partial suppression of the sweat function, had something to do with its inception." The length of time the men examined had been employed was, in the majority of cases, very short, so that in a number of cases there had hardly been time enough for the mild chronic effects of tellurium to have developed, and the one who had worked in the department for the longest period—two and a half years—had been exposed to the hazard only at rare intervals.

Chemistry and Properties of Tellurium.

THE paper considers the chemistry of tellurium, which in the past was scarce, the only method of obtaining it being a very lengthy one of extraction applied to large masses of ores. It is now obtained from the dross produced in electrorefining. In this process the slime which settles to the bottom of the electrolytic tanks is treated to

recover the more precious metals, and the residuum is then treated to obtain the tellurium. It may also be prepared from its minerals or from the residue in several metallurgical processes.

Tellurium is a bluish-white silverlike element possessing metallic luster. It is a poor conductor of heat and electricity. It melts at 452° C. When slowly cooled from the molten state it forms hexagonal rhombohedral crystals, isomorphous with sulphur and selenium. In physical properties it resembles the metals, but in chemical properties it is decidedly nonmetallic. It forms one of the oxygen family of elements and is closely related to sulphur and selenium of the same family.

Summary.

AFTER a consideration of the poisonous properties of tellurium, based upon the 13 cases examined and upon experimental work, the paper concludes with this summary to which a "fairly complete" bibliography of the subject is added:

Until within recent years tellurium was considered only as more or less of a chemical curiosity. With the development of the electrolytic-refining industry, however, its production has increased, and it can no longer be considered a rare element. As yet no very important industrial use has been found for it; but numerous research organizations, among them the National Research Council, are attempting to discover ways in which it can be used on a large scale in industry. At present at least one large corporation has erected a plant for the sole purpose of isolating and refining tellurium. With the further development of such activities it is to be expected that the production of tellurium will greatly increase and that concomitantly there will be an increase in the health hazard incident to the increased exposure of the workers. We might then expect to encounter the severe effects of tellurium poisoning, such as are now manifested by laboratory animals under the influence of fairly large doses of tellurium.

The tellurium poisoning encountered thus far in industry has not been severe. The primary effects are suppression of the sweat, of the saliva, and of the acid in the gastric juice. This leads to a dry, itching skin, dry mouth, metallic taste, anorexia, nausea, vomiting, indigestion, and constipation. Somnolence is often a prominent symptom. The earliest symptom of tellurium absorption is the garlic odor to the secretions and excretions due to methyl telluride. Secondary effects to be expected are impaired nutrition with emaciation and, where the workers are exposed to high temperatures, increased susceptibility to heat exhaustion.

The diagnosis of tellurium poisoning may be made from the garlic odor of the excretions, the suppression of the sweat, the dryness of the mouth, and the demonstration of tellurium in the urine or feces.

The preventive measures are similar to those used for other metallic poisons and may be summed up as good working conditions and proper personal hygiene.

In treatment, of course, the most important measure is the removal of cause. After that pilocarpin may be used to counteract the effect of the tellurium, and the avenues of elimination should be opened and excretion favored by promoting secretions, diuresis, and free bowel movements. Hydrochloric acid may be administered to remedy the deficiency of acid secretion. The remainder of the treatment is symptomatic.

The prognosis so far has been good, the condition gradually improving upon prompt removal of the cause. This is due to the fact that no serious cases have thus far been encountered. It is thought that the prognosis will be less favorable when more severe poisoning occurs as a result of greater absorption of tellurium incident to its increased production.

The 13 workers reported are still under observation and physical examinations will be made from time to time to observe their condition. New workers in the department will also be closely watched. Along with this, laboratory work is being done to determine more accurately the toxicity of tellurium and its effects upon the blood, blood pressure, kidneys, etc.

It is hoped that samples of the air which the men breathe may be collected while they work, so that determinations of the amount of tellurium taken into the lungs may be determined. Similar determination of the amounts ingested would also be of value, and it is expected that they will be made.

Hexamethylene-tetramine as a Poison in the Rubber Industry.

THE rash produced by hexamethylene-tetramine upon workers in the rubber industry and a means of prevention are discussed in a paper published in the Journal of Industrial Hygiene[1] as a reprint from the India Rubber World, of November 1, 1919.

The paper gives the results of a study made by the research laboratory of the Firestone Tire & Rubber Co., Akron, Ohio, of organic accelerators of vulcanization. Special attention was given to the subject of toxicity with the purpose of finding an accelerator which combines excellent acceleration with a minimum of toxic action, and the authors state that "Knowing that many rubber companies are using hexamethylene-tetramine or 'urotropin,' it was thought that a study of the toxicology of this substance would be of interest not only to ourselves, but also to those who are already using this accelerator." The investigation was extended to cover the probable cause of its action and to find, if possible, an antidote or simple means of prevention.

The paper refers to a report of an investigation into the toxic properties of the more commonly used accelerators presented in September, 1918, by the committee on organic accelerators of the rubber section of the American Chemical Society, in which the action of hexamethylene-tetramine was summarized as follows:

Symptoms of poisoning.—Rash and inflammation of skin which has been in repeated contact with stock containing this material. In severe cases, blisters filled with watery fluid result.

Antidote.—Cleanliness and care in regard to clothing are the best preventives. Change of occupation will cause the rash to disappear, leaving no permanent effects.

In order to study the nature of the irritation ascribed to this accelerator, the tetramine was applied in powdered form and in water solution to different parts of the body of men selected for these tests. The results of the experiment were negative and the accelerator was then introduced into a factory compound in order to study its effect upon actual working conditions, the workmen handling the experimental stock being carefully observed. This test was begun in cool weather and for some time no deleterious effect was observed. With the approach of warmer weather, however, the action of the hexamethylene-tetramine began to manifest itself, usually appearing first as a rash on the wrist or forearm and in many cases remaining confined to these parts, but in others spreading to the face and neck, especially around the eyes, and occasionally appearing on the shoulders, legs, and even across the stomach. The authors concluded that perspiration undoubtedly plays an important part in the production of the rash, as it became almost epidemic with the rise in temperature.

Sodium Bicarbonate in Prevention and Treatment.

THE account of the use of sodium bicarbonate in the treatment of this rash upon men selected for tests is given in detail, and the authors state:

[1] Poisons in the rubber industry. By Norman A. Shepard and Stanley Krall. In Journal of Industrial Hygiene, Boston, May, 1920, pp. 33-38.

On the strength of these results bicarbonate solution was provided, so that all the men handling the raw stock containing the hexamethylene-tetramine could obtain it if troubled with this rash. Though it was not possible to obtain as accurate data on all those applying the solution, the reports obtained from both the foremen and the men using the solution were very encouraging. * * *

While it is true that the necessity for the application of any preventive or prophylactic solution, such as bicarbonate of soda or borax, is a serious drawback to the use of a substance as an accelerator, it does not prohibit its use. It offers a better solution of the difficulty certainly than that offered by the committee on accelerators. "Change of occupation," with the entailed loss of wages and curtailed production, can scarcely be considered a satisfactory antidote, either from the standpoint of the employee or employer.

It was found that the use of the bicarbonate solution is attended by no disagreeable results, except a considerable smarting when first applied to a severe case, and that it can be applied to the face and neck and even around the eyes with perfect safety. While it has an apparent curative effect, it is stated to be unquestionably chiefly preventive, the result being that while further development of the rash is prevented the old rash is allowed to heal without further infection. The authors believe that, while their observations are based upon a comparatively small number of cases, "the results seem to justify the conclusion that bicarbonate can be used successfully in controlling the hexamethylene-tetramine rash."

Industrial Blood Poisons in Anilin Manufacture.

"INDUSTRIAL blood poisons" is the title of an article by C. R. Newton, in the Journal of the American Medical Association, Chicago, April 24, 1920 (pp. 1149, 1150), which is based on a first-hand study of 8 cases of benzene and anilin intoxication selected from a number of cases occurring in anilin manufacture during the early days of the war before the manufacturing methods were improved; this was followed by a study of 10 cases subject to more or less exposure to benzene, made for the purpose of determining the cumulative properties of this poison. The following is the history of a typical case:

Mr. A., chemist, aged 30, in charge of operations, who had been working intensively in benzene for about two weeks, complained, June 12, 1916, of headache, anorexia, lassitude, and loss of weight. Suddenly pain in the abdomen developed, accompanied by nausea and vomiting. Physical examination detected nothing abnormal. Temperature and pulse were normal. An examination of the blood, however, revealed a marked leucopenia. The blood was normal in color, but seemed to be lacking in viscidity. There were 5,760,000 red blood cells per cubic millimeter; 1,200 white blood cells; hemoglobin, 85 per cent (Sahli). The differential count revealed: Large mononuclears, 39 per cent; small mononuclears, 0; polymorphonuclears, 54 per cent; eosinophils, 0; transitionals, 0.6; other cells, 0; total, 93.6 per cent.

The intoxication in this case was largely from inhalation. Aside from the blood findings, the physical picture is that of a nervous dyspepsia, which was probably true in this case, as the man was of a nervous temperament and anxious over the responsibility of his position.

After a month's leave of absence with complete rest, the leucocyte count became normal and the patient made a complete recovery. It was not our observation that a leucopenia alone, of the severity herein described, would cause symptoms.

The author states it as his opinion—

Not that benzene and its amino-derivatives possess any very definite cumulative action, but that the anemias of which they are the cause follow a definite intoxication

or a series of definite intoxications. It remains to be determined, however, whether or not the constant inhalation of even minute quantities of benzene vapor from spreading machines, cement cans, and other sources would tend to interfere with proper oxygenation of the blood and tissues, even when there is no cell destruction, and thus undermine the worker's resistance to disease.

The following conclusions are reached:

1. Workers chronically exposed to benzene may show leucopenia without any other symptoms, and make complete recovery.

2. Acute exposure to anilin and nitrobenzene vapors produced cyanosis with destruction of the red blood corpuscles, but with little change in the white corpuscles with recovery. In one case in which free benzene was presumably present, there was destruction of white cells without appreciable destruction of red cells, and a more rapid recovery, that is, in three days.

3. The maximum white cell destruction by benzene, and the maximum red cell destruction by anilin-nitrobenzene, may not be reached for several hours after the onset of the symptoms.

4. Workers exposed for long periods to benzene may not have a leucopenia; apparently, therefore, the action is not cumulative.

WORKMEN'S COMPENSATION.

Constitutionality of Amendment to Judicial Code as to Maritime Injuries.

ON MAY 17, 1920, the United States Supreme Court handed down a decision involving the much disputed point of conflict between Admiralty jurisdiction in maritime cases and the jurisdiction of the State workmen's compensation laws. The decision was rendered in the case of Knickerbocker Ice Co. *v.* Stewart (40 Sup. Ct. ——), which was brought to the Supreme Court on a writ of error from a decision of the Court of Appeals of the State of New York. In this case William Stewart, while employed by the Knickerbocker Ice Co. as a bargeman, and while he was doing work of a maritime nature, fell into the Hudson River and was drowned. His widow elected to take compensation under the State workmen's compensation act and the State industrial commission allowed an award. The employer appealed from this award, first to the appellate division of the New York Supreme Court and thence to the court of appeals, but in each case the award of the industrial commission allowing compensation was affirmed. Thereupon the employer took the case to the United States Supreme Court on a writ of error. The Supreme Court reversed the decision of the New York Court of Appeals and remanded the case for further proceedings not inconsistent with its opinion. A dissenting opinion was rendered by Mr. Justice Holmes in which Justices Pitney, Brandeis, and Clarke concurred. These same justices dissented in the opinion handed down in the case of Southern Pacific Co. *v.* Jensen, 244 U. S. 205, 37 Sup. Ct. 524. (See MONTHLY REVIEW for July, 1917, pp. 100–103.)

The constitutionality of the New York compensation act was assailed in the United States Supreme Court in the Jensen case, in which the State courts had affirmed an award for maritime injuries, and the law was declared unconstitutional because it compulsorily included employers engaged in maritime work as well as those engaged in industrial enterprises. This inclusion of maritime cases was held to be an invasion of the exclusive jurisdiction vested in the Federal courts under section 2, Article III, of the United States Constitution and clause 3, sections 24 and 256, of the Federal Judicial Code. Subsequent to the decision rendered in the Jensen case Congress amended clause 3 of section 256 of the Judicial Code, which contains a saving clause allowing suitors to choose whether to sue in admiralty or at common law, by adding thereto the following: "and to claimants the rights and remedies under the workmen's compensation laws of any State," making the third clause read as follows:

> The District Court shall have original jurisdiction as follows:
>
> * * * * * * *
>
> Third. Of all civil causes of admiralty and maritime jurisdiction, saving to suitors in all cases the right of a common-law remedy where the common law is competent to give it, and to claimants the rights and remedies under the workmen's compensation law of any State.

The Knickerbocker Ice Co. in this case contended that the New York workmen's compensation law did not in any way apply to it notwithstanding the amendment to the Judicial Code above quoted. It based its case almost entirely upon the decision in the Jensen case and maintained that Congress had no authority to make the workmen's compensation laws of any State applicable to admiralty or maritime cases. In this contention the company was upheld by the Supreme Court, which declared the aforementioned amendment to the Judicial Code unconstitutional and void. Mr. Justice McReynolds, who rendered the majority opinion, said in part:

> The act [amendment to clause 3, section 256, Judicial Code] only undertook to add certain specified rights and remedies to a saving clause within a code section conferring jurisdiction. We have held that before the amendment and irrespective of that section, such rights and remedies did not apply to maritime torts because they were inconsistent with paramount Federal law—within that field they had no existence. Were the added words therefore wholly ineffective? The usual function of a saving clause is to preserve something from immediate interference—not to create; and the rule is that expression by the legislature of an erroneous opinion concerning the law does not alter it. Endlich, Interpretation of Statutes, sec. 372.
>
> Neither branch of Congress devoted much debate to the act under consideration—altogether, less than two pages of the Record (65th Cong., 1st sess., pp. 7605, 7843). The Judiciary Committee of the House made no report; but a brief one by the Senate Judiciary Committee probably indicates the general legislative purpose. And, with this and the accompanying circumstances, the words must be read.
>
> Having regard to all these things, we conclude that Congress undertook to permit application of workmen's compensation laws of the several States to injuries within admiralty and maritime jurisdiction; and to save such statutes from the objections pointed out in Southern Pacific Co. *v.* Jensen. It sought to authorize and sanction action by the States in prescribing and enforcing, as to all parties concerned, rights, obligations, liabilities, and remedies designed to provide compensation for injuries suffered by employees engaged in maritime work.
>
> And so construed, we think the enactment is beyond the power of Congress. Its power to legislate concerning the rights and liabilities within the maritime jurisdiction and remedies for their enforcement, arises from the Constitution, as above indicated. The definite object of the grant was to commit direct control to the Federal Government; to relieve maritime commerce from unnecessary burdens and disadvantages incident to discordant legislation; and to establish, so far as practicable, harmonious and uniform rules applicable throughout every part of the Union.
>
> To say that because Congress could have enacted a compensation act applicable to maritime injuries, it could authorize the States to do so as they might desire, is false reasoning. Moreover, such an authorization would inevitably destroy the harmony and uniformity which the Constitution not only contemplated but actually established—it would defeat the very purpose of the grant.

The Dissenting Opinion.

THE dissenting opinion, as presented by Mr. Justice Holmes, after reciting the references to the amended sections of the Judicial Code, continues in part as follows:

> I do not suppose that anyone would say that the words, "The judicial power shall extend * * * to all cases of admiralty and maritime jurisdiction" (Constitution, Art. III, sec. 3), by implication enacted a whole code for master and servant at sea, that could be modified only by a constitutional amendment. But somehow or other the ordinary common-law rules of liability as between master and servant have come to be applied to a considerable extent in admiralty. If my explanation, that the source is the common law of the several States, is not accepted, I can only say I do not know how unless by the fiat of the judges. But surely the power that imposed the obligation can change it, and I suppose Congress can do as much as the judges who introduced the rules. For we know that they were introduced and can not have been elicited by logic alone from the medieval sea laws.

But if Congress can legislate, it has done so. It has adopted statutes that were in force when the act of October 6, 1917, was passed, and to that extent has acted as definitely as if it had repeated the words used by the several States—not an unfamiliar form of law. [Cases cited.] An act of Congress, we always say, will be construed so as to sustain it, if possible, and therefore if it were necessary the words "rights and remedies under the workmen's compensation laws of any State" should be taken to refer solely to laws existing at the time, as it certainly does at least include them.

Mr. Justice Holmes cited in support of his position, and that of his concurring colleagues, decisions sustaining the validity of State pilotage laws, and also pointed out that in the saving of a common-law remedy, Congress "adopted the common law of the several States within their several jurisdictions, and, I may add by way of anticipation, included at least some subsequent statutory changes," citing cases.

However desirable it may seem to any student of the problem that there should be a compensation system for maritime workers such as practically all the States having important harbors have enacted, the fact remains that Congress in its attempt to provide this system through its amendment of the Judicial Code enacted a diverse and not a uniform method of adjudication. The laws of New York cover the great harbor of the city of the same name, while the port of Boston is covered by a compensation law differing considerably in its provisions; and the same is true for Philadelphia, Baltimore, Baton Rouge, Galveston, San Francisco, Seattle, etc. Furthermore, three inharmonious modes of recovery apparently existed side by side: In admiralty, at common law, and under the compensation law of the locality where the accident occurred or the contract was entered into. Such diversity makes for uncertainty and conflict, and is at direct variance with "the object of vesting in Congress the power to regulate commerce with foreign nations and among the States," which "was to insure uniformity of regulation against conflicting and discriminating State legislation" (County of Mobile *v.* Kimball (1880), 102 U. S. 691); or, as said in the Jensen case above cited, "If New York can subject foreign ships coming to her ports to such obligations as those imposed by her compensation statute, other States may do likewise. The necessary consequence would be destruction of the very uniformity in respect to maritime matters which the Constitution was designed to establish."

It is of interest to note the diversity of construction put upon the amendment to the Judicial Code prior to the decision in the instant case. A Federal judge of the New York district took the view that the amendment had the effect of incorporating into the Judicial Code compensation legislation whether existing or of subsequent enactment; so that in States where other liabilities were abolished in favor of the remedy provided by compensation, this provision was operative in maritime cases since the amendment of the code, and none other could be availed of. (The Howell, 257 Fed. 578.) On the other hand, a court of the same rank of the district of Oregon took the ground that since the amendment to the code placed the three remedies on an equality, the Oregon compensation law could not be regarded as exclusive, and that Federal courts must administer maritime law as provided by Congress, unaffected by State legislation. (Rohde *v.* Grant Smith Porter Co., 259 Fed. 304.) The decision of the Supreme Court of California, March 12, 1920, in a case

not yet reported, goes still further, holding the amendment to the Judicial Code unconstitutional on grounds closely paralleling those announced by the Supreme Court of the United States in its decision two months later. (Sudden & Christensen *v.* Industrial Accident Commission, —— Pac. ——.)

The decision of the Supreme Court has at least the merit of ending the very apparent uncertainty as to the effect and validity of the Federal amendment under consideration, and points the way to authoritative action by Congress; or, as said by the Seamen's Journal of San Francisco, "In one way the decision is a distinct relief. The maritime workers of the United States now know where they stand in this matter. Let them now get together and clear the decks for action that will lead to the speedy enactment of a Federal workmen's compensation law."

Of course the decision invalidates awards made under the amendment, and terminates all claims under consideration where the injury comes under maritime law.

In California, for instance, the decision has destroyed every hope the widows and children of the men lost in the *Roanoke*, *San Gabriel*, *George Loomis*, and *J. A. Chanslor* ever had of getting any compensation whatever. It is worse than useless for them to bring suits in a court of admiralty, for the law expressly limits the shipowner's liability for damage resulting from the loss of the ship to the amount salvaged from the wreck, and the above named ships were all total losses.

Even the long-established saving of a common-law remedy found in the code can hardly be looked upon as valuable in view of the decision of the Supreme Court in a case in which the 20th section of the seamen's act of 1915 (38 Stat. 1185) was under consideration. This section undertook to abolish the doctrine of fellow service as between seamen having command and those under their authority. It was held (Chelentis *v.* Luckenbach S. S. Co., 247 U. S. 372, 38 Sup. Ct. 501) that it was only possible to enforce by common-law remedies any right sanctioned by the maritime law, this being the utmost effect that could be given to the saving in the Judicial Code. "We find nothing therein which reveals an intention to give the complaining party an election to determine whether the defendant's liability shall be measured by common-law standards rather than those by the maritime law." The section of the seamen's act under consideration was said to "disclose no intention to impose upon shipowners the same measure of liability for injuries suffered by the crew while at sea as the common law prescribes for employers in respect of their employees on shore." This decision so completely invalidates the anticipated effect of section 20 of the seamen's act that an amendment thereof has been incorporated in current legislation which proposes an election on the part of a seaman suffering personal injury by which he may bring suit, with right of trial by jury, in lieu of a maritime proceeding, and have in his action the benefit of "all statutes of the United States modifying or extending the common-law right or remedy in cases of personal injury to railway employees." This has the advantage, of course, of making applicable the provisions of a Federal law, but in the face of the decision in the Chelentis case it is not apparent that it has surmounted the difficulties therein interposed to the operation of the original section. Furthermore, it proposes at best to give but a right of action under the limitations of a type of

law that has been largely disappointing to its proponents in its own field, and whose spirit is not in harmony with maritime law.

Those who have studied the workings of the railroad act for interstate commerce in comparison with the results of compensation legislation when applied to similar employment in carrying on intrastate commerce can but regret that the efforts put forth to secure an amendment permitting suits for damages could not have been directed to the securing of a compensation law, which after all more nearly approaches the spirit of the maritime law in its disregard of the matter of negligence as a basis for claims, and has been abundantly approved in the 42 States of the Union in which such laws now exist. The decision in the Knickerbocker case shows the necessity for congressional action in behalf of maritime employees just as emphatically as the decision in the case of the New York Central R. R. Co. *v.* Winfield (244 U. S. 147, 37 Sup. Ct. 546) demonstrates the necessity of Federal action for interstate carriers by railroad. The reasons for the failure thus far to secure this much-needed legislation for employees in interstate and foreign commerce need not be gone into, but it is evident that every added failure to secure the benefits of improved legislation by piecemeal or compromise action only emphasizes the duty and responsibility of Congress to provide a uniform law, efficiently administered, for the compensation of injured workers and their dependents in these great fields which are beyond the control of the States.

Recent Reports on Operation of Workmen's Compensation Laws.

Illinois.

THE Industrial Commission of Illinois recently published a brief report on its activities for the year ending June 30, 1919, with statistics for the calendar years 1917 and 1918.[1] The report opens with a review of the amendments to the State law enlarging benefits in a number of cases, and making procedure more simple and direct. It is shown that 294 compensation cases were pending or taken up to the court on appeal from the orders of the commission during the year. Of these, 149 were pending at the end of the year. In 92 cases the decision of the industrial commission was affirmed, while in 29 the court disagreed with the commission on some point. In 21 cases the matter was remanded to the commission, in 6 the award was vacated, and in 2 the record of the commission was quashed. Important decisions of the supreme court are also noted, particular emphasis being placed on one in which a one-armed workman lost a leg as a result of an accident in his employment and was held to be entitled to compensation by the last employer for permanent total disability.

The total number of arbitrations filed for the year ending July 1, 1919, was 5,696, which was 52 per cent more than the number for the

[1] Industrial Commission, State of Illinois. Annual report for fiscal year ending June 30, 1919, and statistical report for calendar years 1918 and 1917. Springfield, Ill., 1920. 49 pp.

preceding year. There were 2,869 awards made, or just about one-half of the number of arbitrations filed. The total amount awarded was $2,796,905.

Requests for lump sums numbered 3,014. Lump sums were granted in 2,359 cases, of which 2,051 were for nonfatal injuries, and 308 for fatal injuries; final rejection was made in 193 cases, while all other cases were continued or otherwise disposed of.

The statistical tables are presented, "as far as possible," in accordance with the recommendations of the statistical committee of the International Association of Industrial Accident Boards and Commissions. A new feature of the table of awards is one showing the unpaid amounts on awards for the year. The number of accidents for 1918 (calendar year) was 38,247. Of these, 35,989 were reported as closed cases, and 2,258 as open or pending. The amount of compensation paid for both classes of cases was $3,399,243, while the amount still to be paid was $1,747,252. Medical and funeral expenses are reported at $497,691, though it is said that medical payments undoubtedly greatly exceeded the above amount, as it does not include payments on noncompensable accidents nor medical payments made by contracts.

The largest number of accidents, 8,490, is reported from the mining of coal; next come metal products, with 4,405; foods, beverages, and tobacco, 4,001; and machinery and instruments, 3,107. Out of 38,247 compensable cases, 629 were for death, 10 for permanent total disability, 3,904 for permanent partial disability, and 33,704 for temporary total disability. A table giving the location of injuries shows that there were 2,654 head injuries, of which more than one-half—1,456—affected one eye, while 60 affected both eyes. Injuries to the face and neck numbered 938, to the trunk 5,310, to the upper extremities 17,060, to the thumb 1,717, and to the index finger 2,989. The lower extremities suffered 12,285 injuries.

Other tables show the nature of the injury by cause of accident, nature of injury and result of disability, and distribution by counties, by months, by sex and age, and by industry, dependency, and average cost. The average cost of temporary total disabilities was $54; of permanent partial disabilities, $511; of permanent total disabilities, $11,961; and for death, $2,703.

Similar tables to those noted above are given for the year 1917, besides a detailed table of fatal accidents showing occupation, age, cause of accident, number of dependents, compensation, medical and hospital expenses, and funeral costs.

Kentucky.

THE third annual report of the compensation board of Kentucky[2] begins with an account of the maintenance fund, which is derived from a 4 per cent tax on the net premiums received by insurance companies on compensation business done in this State, and a like tax on self insurers. The income for the first year was $36,236, and expenses amounted to $26,589. Income during the second year and balance carried over from the first year totaled $46,053,

[2] Workmen's Compensation Board, Commonwealth of Kentucky. Annual report of department, June 30, 1918, to June 30, 1919. [Frankfort, 1919.] 82 pp.

of which $26,025 was expended. The third year showed receipts and balance carried over from preceding year totaling $106,593 and expenses amounting to $32,388, leaving a balance of $74,205 on June 30, 1919. The low cost of administration, which is said to be due to restricting the employment of assistance to that which was absolutely necessary, "consistent with the growth and development of the department," is emphasized.

The number of accidents reported during the year was 13,894, of which the coal-mining industry was responsible for 4,784; 5,850 agreements were approved by the board, covering compensation amounting to $293,522, besides medical, surgical, and hospital expenses. The satisfactory operation of the act is said to be evidenced by the fact that up to June 30, 1919, 5,674 employers had accepted the provisions of the law, while only 42 had withdrawn their acceptances, and in no case was a complaint filed as a cause of the withdrawal.

The Kentucky statute is unique in legislation in the United States, in that it requires a written election by the employee if he is to come under the act. This is said to be a necessity on account of the provision of the State constitution, which was held by the court of appeals of the State to invalidate the earlier law which presumed election by the employee where the employer had accepted the provisions of the act. An amendment to the constitution is recommended, so as to avoid the necessity of this provision, inasmuch as it is thought to militate against the satisfactory operation of the law, employees being debarred from rights under it by any failure to take the necessary step, even though they may have intended to do so.

The tables show the number of accidents by industries, by cause of injury, by nature of injury, the amount of awards, the number of closed cases, and by duration of disability in days. There is some lack of coordination and classification of the material, so that the data can not be made use of as readily as might be desired. The report closes with a discussion of procedure, and a reproduction of the rules used and an explanation of the forms adopted by the board.

Oklahoma.[3]

THE compensation law of this State and rules of procedure of the commission are presented in the first 60 pages, following which are opinions of the industrial commission, and of the supreme court in cases appealed from the commission. This is the second volume of the series, and presents 58 decisions by the commission and 7 by the supreme court. The volume is published in accordance with an order by the commission, which directs that persons transacting business before the commission and desiring to refer to its decisions or orders, "shall refer to same by citing the official reports by style of case and page and volume number of said reports." Following the opinions reproduced is a digest presenting, under various topical headings, brief statements of findings, with citations to cases. Indexes to the law and the rules conclude the report.

[3] Industrial Commission. Reports, vol. 2. Cases determined by the commission from Jan. 1, 1918, to Jan. 1, 1920. Oklahoma City, 1920. 327 pp.

Oregon.[4]

THE report of the Industrial Accident Commission of Oregon is practically entirely statistical, and differs from the usual report in that it presents data in cumulative form covering three years' operation of the law. The act came into effect July 1, 1914, but the first year's experience is omitted from the cumulative tables, so that but three years' experience is shown. The reason for cumulative rather than separate tables "is that the larger volume of experience and the longer period covered tend to smooth out the irregularities of the separate years, thus making the results more reliable."

Certain facts are given, however, for the fiscal year covering July 1, 1917, to June 30, 1918. The entire business of compensation is transacted through a State fund to which employers contribute at classified rates, while 1 cent for each day worked is to be contributed by the employee. For the year named the employers contributed $1,769,368, and workmen $156,152. The total receipts were $2,181,431 and disbursements for benefits $1,349,540, while administrative expenses amounted to $106,428. The balance on hand June 30, 1918, was $1,026,785.

Receipts for the three-year period averaged for all industries $3.33 per year per $100 of pay roll; disbursements equaled $2.51 per $100 of pay roll. "The three-year experience shows that of the total expenditures by the commission the injured workmen or their dependents received in compensation benefits an average of $0.9298 of every dollar of such expenditures, and that but $0.0702 was required to carry the benefits to claimants." Figured on the basis of 300 actual working days representing a full-time worker the summary for the three years shows that 121,272.94 full-time workers suffered 25,119 accidents, losing a total of 2,773,670 days, or 22.871 days per full-time worker. The number of accidents per full-time worker was 0.207.

Fatal cases receiving awards through the three years were 225 in number, or nine-tenths of 1 per cent of all cases; they were responsible, however, for 44.85 per cent of the total awards. Permanent total disability cases numbered 17, or 0.07 per cent of the total, and received 5.21 per cent of the awards. Permanent partial disability resulted in 1,196 cases, or 4.76 per cent of the total, incurring 22.26 per cent of the awards. There were 23,681 cases of temporary total disability, or 94.27 per cent of the total, and costing 27.68 per cent of the aggregated awards. The number of awards for the three years was 25,119 and the aggregate awards, $2,381,237.

A valuable detailed table shows by industries and groups of industries, receipts and disbursements for the funds, showing separately the gross pay roll for 36 months on which premiums were based, premiums received, workmen's payment, other sources of income, claim awards, and administrative expenses. The total receipts and disbursements per $100 of gross pay roll, and disbursements per working day, are also shown. The gross pay rolls for 36 months amounted to $118,610,478. There were employers' premiums of $3,103,561, and workmen's contributions of $332,375, the total

[4] Third report of the State Industrial Accident Commission, showing the cumulative experience for the three-year period ending June 30, 1918. Salem, 1920. 81 pp.

receipts aggregating $3,947,386. Total disbursements amounted to $2,977,651, or $0.082 per working day.

The second table shows frequency of accidents by industries and extent of disability; and the third, severity of injuries by industries and extent of disability. In computing severity the commission makes use of the weightings adopted by the committee on statistics and compensation insurance cost of the International Association of Industrial Accident Boards and Commissions. The fourth table presents compensation and medical aid by extent of disability.

The following table summarizes the experience for the year ending June 30, 1918, and the three years' experience:

COMPENSATION PAID, AND MEDICAL COSTS, BY NATURE OF DISABILITY, FOR THE YEAR AND FOR THREE YEARS ENDING JUNE 30, 1918.

Nature of disability.	Year ending June 30, 1918.				Three years ending June 30, 1918.			
	Compensation.		Medical aid.		Compensation.		Medical aid.	
	Number of cases.	Average amount.	Number of cases.	Average cost.	Number of cases.	Average amount.	Number of cases.	Average cost.
Deaths	103	$5,122.90	57	$47.49	225	$4,746.61	(1)	$30.60
Permanent total disabilities	9	7,072.22	6	204.15	17	7,302.80	(1)	205.43
Permanent partial disabilities	605	403.99	306	54.80	1,196	443.19	(1)	58.68
Temporary total disabilities	12,024	27.78	6,686	13.80	23,681	27.83	(1)	13.61
	12,741	91.81	7,052	15.54	25,119	94.80	13,582	16.11

[1] The number of cases in which medical aid was furnished is not given separately. The costs here shown are based on an aggregate of 13,582 cases. In the remaining cases, medical aid was given under contract, and the cost per case could not be determined.

Other tables show causes of accidents by extent of disability; nature of injury by cause; nature and location of injury, by extent of disability; infected injuries; sex and wages; and sex and age. The concluding table shows remarriage experience of widows to whom compensation awards have been made for the full four-year period of the operation of the act up to June 30, 1918. The table shows widow's age at death of husband, grouped by five-year periods, the average age of children, their number, and the number of widows remarrying in each of the four years. The total number of widows was 159, of whom but 17 have remarried. Seven remarriages occurred in the first year, 6 in the second, 3 in the third, and 1 in the fourth; one widow died in the first year without remarriage. The aggregate years of widowhood amounted to 239. The year in which widowhood occurred is not indicated, but the diminishing number of marriages from the first to the fourth year indicates, so far as any opinion can be formed from such a slight basis, that the tendency to remain single and draw the compensation benefits has increased rather than diminished.

Washington.[5]

THE Industrial Insurance and Medical Aid Departments of Washington combined in the publication of their report for the year ending September 30, 1919. The report opens with an ac-

[5] Eighth annual report of the Industrial Insurance and Medical Aid Departments for the 12 months ending Sept. 30, 1919. Olympia, 1920. 95 pp.

knowledgment of the benefits derived from enlarged appropriations, making it possible to raise the efficiency of the department. It is noted later, however, that the natural growth of the industries of the State was greater than was anticipated when the appropriation was made, so that even with undesirable economies, a deficit is likely to develop. Recommended amendments were adopted by the legislature of 1919, so that a number of new industries have been brought under the act, and other desirable changes have been made. However, these changes result in such modifications of the reports as to render the report for the current year not comparable with the earlier reports in a number of respects. The desirability of uniformity is dwelt upon at some length, and is "regarded as an important objective." A prime existing difficulty is the variation in waiting time. "A State that has a seven-day waiting period has no record of approximately 25 per cent of industrial accidents. Where the waiting period is two weeks, the State will have no record of about 50 per cent of industrial accidents." The original law of Washington had no waiting period, but in 1917 a seven-day waiting period was established. This change "had the immediate effect of reducing the relative number of accidents reported from time to time, because in most instances where the loss of time was less than seven days, there being no compensation involved, neither employer nor employee could be induced to render any report." It was estimated that with a uniform waiting period about 90 per cent of the statistical matter could be made uniform in the different State reports.

Washington is one of the States having a compulsory compensation system and an exclusive State fund. The accident fund is divided into 38 classes, for each of which balances are separately maintained. At the beginning of the year covered the total balance for all funds was $876,626, while at the end of the year it was $1,072,742. The aggregate for reserve funds for all classes likewise increased from $2,616,649 to $3,606,735. The medical aid fund showed a balance on hand at the end of the year of $160,902.

The average cost of insurance for each class per $100 of pay roll is shown for the years 1913 to 1918, inclusive. This ranges from 11 cents in lithographing, printing, etc., 16 cents in moving pictures, theaters, etc., and 30 cents in those industries which are permitted to come under the act by elective adoption, to $4.44 in the construction of canals, pile driving, the building of breakwaters, etc., and $4.05 for work on bridges and trestles, millwrighting, tanks and towers. The rate for shipbuilding has averaged $1.23 per $100 of pay roll; for logging, sawmills, etc., $1.92; for coal mines, $3; for smelters, etc., $1.37; and for tunnels, sewers, drilling wells, etc., $2.75. "This is industrial insurance at actual cost. Every dollar paid in by the employers of the State goes direct to their injured employees." The report presents comparisons drawn by statisticians who have examined the laws of States having competitive State funds, setting forth the savings that would result if the rates and system in force in Washington had been in effect in these States.

The number of accidents reported for the year was 22,273, a decrease of 18.4 per cent as compared with the previous year. Of these, 368 were fatal and 30 were adjudged to be permanent total

disabilities. Adjudications made during the year allowed awards in 11,803 cases of temporary disability, 418 cases of death, and 29 cases of permanent total disability. There were also 2,366 awards for permanent partial disability. The average duration in work days of temporary total disability is given as 35.9, and the average cost as $50.02. Permanent partial disabilities received an average award of $374.79. It is of interest to note the closeness of this average to that for the year 1916, when there is added to the earlier average the 30 per cent increase due to the increased benefits allowed by amendment to the law. Thus in 1916 the average for permanent partial disabilities was $289, which, increased by 30 per cent would be $375.70, or within a dollar of the experience of 1919. Of the 418 claims for death, 171 had been suspended or rejected by the end of the year. The 247 cases pensioned had been awarded an average rate of $25.44 per month; the average amount of reserves for pensions was $3,670.37. For permanent total disability the average monthly pension was $27.17 and the average reserves $4,062.23.

Other tables show the number of dependents; nativity; conjugal condition; causes of injury, mechanically produced and nonmechanical, by industry; classes; duration of disability; severity ratings, and the specific injuries resulting under different classifications as amputations, fractures, dislocations, etc.

Wyoming.[6]

THE Workmen's Compensation Department of Wyoming issued for the year ending December 31, 1919, a report entitled "Employers' Number." While this report gives in detail the operations of the compensation law of the State for the calendar year 1919, it also summarizes its operations for the 57 months since the act came into operation on April 1, 1915. The first report covered 18 months, the second 15 months, while the third and fourth relate to calendar years. These variations of periods render comparisons possible only for 1918 and 1919.

The report is designated the "Employers' Number" because it is addressed particularly to employers with an effort to promulgate a clearer understanding of what is termed "The Compensation Principle." The law is a compulsory one, and the report attempts so to present the facts as to emphasize the service that is rendered rather than to make prominent the compulsory tax feature of the law. The cooperative benefits are therefore emphasized as well as the moderate costs.

Insurance under the law may be effected only in the State fund, and is required of all employers engaged in extra hazardous employments enumerated in the act. During the first 18 months 241 employers were contributors, while during the second period (15 months) there were 501. During 1918, 664 employers became contributors, while in 1919 the number increased to 1,032. Employers' assessments in 1918 amounted to $215,498, and in 1919 to $240,308.

The State appropriated $40,000 for each of these years, while interest on deposits and investments amounted in 1919 to almost

[6] Fourth report of the Workmen's Compensation Department for the 12 months ending Dec. 31, 1919. Laramie, Wyo., 1920. 165 pp.

as much—$32,803. Disbursements for injuries in 1918 amounted to $94,954, and in 1919 to $131,758. Expenses in 1918 were just under 3.9 per cent of the employers' assessments, while in 1919 they slightly exceeded 3.8 per cent. The total receipts for the State fund during the period of its existence amounted to $1,167,498, while the total disbursements were $418,835, leaving a balance of $748,663.

Awards made during 1919, amounting to $144,252, were distributed in the following proportions: For death, 45.2 per cent; for permanent total disability, 6.6; for permanent partial disability, 29.8; and for temporary disability, 18.4. Taking the whole experience of the nearly five years' operation of the law, there were 123 awards for death amounting to $167,217; 11 for permanent total disability, amounting to $15,158; 292 for permanent partial disability, amounting to $131,684; and 2,187 for temporary disability, amounting to $79,626. The total aggregates 2,613 claims paid, amounting to $393,685. There were 23 supplemental and follow-up orders aggregating $10,426, in addition to the foregoing.

The tables show the number and cause of accidents by nature of industry, receipts and disbursements by industries, and a statement of the individual contributions of employers during the year.

Manitoba.[7]

THE Workmen's Compensation Board of Manitoba presents in its annual report summary figures for 1919, and details for 1917–1918. An amendment of 1919 permits employers not covered by the act voluntarily to place their employees under it, and a growing tendency is noted to make use of this opportunity. The effect of the increased cost of living on the allowances provided for widows and children leads to a recommendation that monthly payments in each case be increased 50 per cent, for widows from $20 to $30, and for children from $5 to $7.50.

The number of accidents reported during 1919 was 2,829, an increase of about 5 per cent over the number reported in 1918. There were 1,684 claims filed, 985 cases in which there were no claims or the claims were not accepted, and 160 cases in which the files were incomplete at the time of the report. Of the claims filed 33 were for death, 70 for permanent disability, either partial or total, and 1,581 for temporary disability.

Comparisons with 1918 show a considerable increase in the amount of business transacted, and a canvass is being made by the board to secure compliance with the law on the part of all classified employers. Some flagrant violations and evasions of the act were found, in all 19 employers being prosecuted, with conviction obtained and a fine imposed in every case. A notable case was that of the Canadian National Railway, which had refused to make its contributions to the administrative fund for two years, but which has finally complied with the act and is now making its contribution as contemplated by law. The administrative expense is borne by a contribution of 7½ per cent of the premiums paid insurance carriers, and at the same rate on an estimated premium chargeable self insurers.

[7] Report for 1919 of the Workmen's Compensation Board, Manitoba. Winnipeg, 1920. 32 pp.

The actual expenses of administration were 6.3 per cent of the estimated premium income for 1919, while in 1918 the rate was 5.69.

The number of accidents occurring in 1918 for which report is made was 1,731. Of these 1,587 were temporary in their results, causing disability for an average of 23.25 days. There were 102 cases of permanent disability, of which but two caused an impairment of the earning capacity amounting to 70 per cent or more. There were 42 deaths, involving 61 total dependents and 4 partial dependents.

The amounts awarded were not given for the different classes of injuries, but the tables show time lost, average age and wage, causes of accidents, month of occurrence, duration of temporary disabilities, nature of injuries, and industries in which permanent disability and death cases occurred.

LABOR LAWS AND DECISIONS.

Retirement of Civil-Service Employees.

THERE was enacted into law on May 22, 1920, a retirement bill for employees in the classified civil service of the United States, this date being the day of its approval by the President. The bill known as the Lehlbach-Sterling bill, from the chairmen of the committees of the House and Senate, respectively, having the matter in charge, passed the Senate April 3, 1920, and passed the House with amendments on the 30th of the same month. The measure then went to conference, where an agreement was reached which received the indorsement of both Houses. This completed the legislative processes in connection with a measure which terminates efforts extending over 30 years. Indeed, civil-service retirement bills were introduced in both Houses of Congress as early as 1887.[1] In 1890 Postmaster General Wanamaker introduced in his annual report a recommendation for a method of retiring superannuated Government employees, with particular reference, of course, to the Postal Service. Repeated recommendations have been made by practically all the Cabinet officers, by the Civil Service Commission, and by others interested, looking toward the same end, and it is estimated that at least 50 bills have been introduced in Congress for its accomplishment.

A prime hindrance to the enactment of any law was the decided divergence of opinion as to how the costs should be met. Some favored retirement at the entire cost of the Government, while others took the view that contributions made by the employees should constitute the sole source of retirement benefits. The idea of joint contributions was finally adopted as a solution of the problem. There were of course some in both Houses who regarded the entire plan as objectionable, but the great majority took the view that it was both economical for the Government and humane to its employees to provide a system of retirement for superannuated workers.

As originally drawn, the bill contemplated retirement for civil-service employees generally at the age of 65 years—mechanics, city and rural letter carriers and post-office clerks being eligible for retirement at the age of 62 years, and railway postal clerks at 60

[1] The so-called Pendleton act, establishing the classified civil service, was enacted in January, 1883. In January, 1887, Senator Hampton of South Carolina and Mr. Crain of Texas, introduced bills in the Senate and House, respectively, "To establish a retired list for persons employed in the Civil Service." A year later Mr. Crain reintroduced his bill in the 50th Congress. No further action in this line was taken until in the 54th Congress bills were introduced by Senator Proctor of Vermont, Mr. Wilson of Ohio, and Mr. Powers of Vermont in December, 1895; by Mr. Tawney of Minnesota in 1896; and by Mr. Brosius of Pennsylvania, Mr. Gillett of Massachusetts, and Mr. Hurley of New York in 1897. Senator Lodge of Massachusetts and Messrs. Hurley, Brosius, Gillett, and Tawney introduced bills in the 55th Congress; and Messrs. Brosius and Boutell (Illinois) in the 56th. Beginning with the 54th Congress, therefore, the effort to secure a retirement system has been practically continuous, though no committee action was taken on any of the bills noted above except an adverse report on Mr. Crain's second bill.

years of age. These recommendations were made by the committees of both Houses, but when the bill was taken up in the Senate there was strong opposition to these age limits, and a uniform retirement age of 70 years was substituted for the various ages named in the bill. When it reached the House the original age limits were restored, but in conference a compromise was made by leaving the age 70 years for the general classes of employees, while for mechanics, letter carriers, and post-office clerks the age was made 65 years, and for railway postal clerks 62 years, and these provisions stand as the terms of the law, there being no opposition in the House, though in the Senate there was some effort to secure an insistence on a uniform 70-year basis. However, the report was considered on May 17 by unanimous consent and adopted without a record vote.

Conditions of retirement are fixed by length of service, no retirement for age being authorized until after 15 years of service, which secures the minimum benefit of 30 per cent of the employee's average annual salary or pay for the 10 years next preceding the date of retirement. The annuity for this class may not exceed $360 per annum nor be less than $180. After service of 18 years but less than 21 the percentage is 36, and the annuity ranges from $216 to $432. The next grade includes employees whose service ranges from 21 to 24 years. These receive 42 per cent of their basic salary or pay, not less than $252 nor more than $504 per annum. Those serving from 24 to 27 years before reaching the age of retirement receive 48 per cent of their pay as an annuity, not less than $288 nor more than $576. From 27 to 30 years the percentage is 54, and a sum not less than $324 nor more than $648. The maximum is 60 per cent of the annual pay for employees having served 30 years or more, the amounts ranging from $360 to $720 per annum.

Employees not wishing to retire on reaching the age fixed by the law may apply for an extension of two years, and if the head of the office in which the applicant is employed certifies to his efficiency and willingness to remain in the service, and that such continuance would be advantageous to the public service, the employee may be retained for a term not to exceed two years on approval and certification by the Civil Service Commission. A similar extension may be had for an additional term, and so on, but at the end of 10 years from the date of the act but two such extensions will be permitted.

Employees "totally disabled for useful and efficient service by reason of disease or injury not due to vicious habits, intemperance, or willful misconduct on the part of the employee" may be retired on the same basis, in so far as periods of service and amounts of benefits are concerned, as are persons reaching the age of 70 years. Annual examinations are provided for to determine the continuing disability of the annuitant.

Persons covered include all employees in the classified civil service of the United States, including superintendents of national cemeteries, employees of the Superintendent of the United States Capitol Buildings and Grounds, the Library of Congress, and the Botanic Gardens. Excepted are persons appointed by the President and confirmed by the Senate, postmasters, and such employees of the Lighthouse Service as come within the provisions of a special retirement act for that service. It also includes all regular annual employees of the

municipal government of the District of Columbia, including those receiving per diem compensation but rendering continuous service. Members of the police and fire departments are excluded, as are school officers and teachers, other retirement systems being provided for them; other public school employees are included, however.

The contributions to be made by employees begin on "the first day of the third month next following the passage of this act," and are made monthly thereafter, the amount being 2½ per cent of the basic salary or pay, therefore not affecting any bonus that may be received. Provision is made for the conservation and investment of these deductions in a special fund to be known as the civil service retirement and disability fund. Such deductions are to be credited to the individual employee, and in case of his absolute separation from the service before becoming eligible for retirement on an annuity, all deductions shall be returned with accrued interest compounded at the rate of 4 per cent per annum. It is also provided that if an annuitant shall die before receiving annuities equal in amount to the total deductions from his or her salary, together with interest thereon at 4 per cent compounded annually, any excess remaining shall be paid over in one sum to the legal representatives of the deceased annuitant; or if the employee shall die before retirement, the amount deducted shall be paid with interest to said representatives.

The act is to be administered by the Commissioner of Pensions, although the Civil Service Commission is to maintain a complete record of transfers, appointments, changes in grade, separation from service, etc., so as to furnish the Commissioner of Pensions with an adequate basis for the handling of the system.

The date for the coming into effect of the act, so far as deductions from salaries are concerned, is reported by the Pension Bureau to be August 1, the first salary payment to be affected being that due on August 15, following which deductions will be made on each pay day, thus keeping all accounts current and equalizing the burden of the deductions, unless the Comptroller of the Treasury shall decide that deductions may be made at the end of each two-week period instead of at the end of the month only. The retirement of persons eligible by reason of attained age will take place August 21, in the absence of action for an extension of service, the employment status terminating August 20.

Federal Provision for Vocational Rehabilitation of Disabled Persons.

A SUMMARY account of legislation looking to the rehabilitation of persons disqualified for employment chiefly by reason of industrial injuries is carried in the MONTHLY LABOR REVIEW for April, 1920 (pp. 202–206).[1] Some of these laws provide for cooperation with the Federal Government in the undertaking, as was pointed out in the article noted.

On June 21, 1919, the Senate passed a bill providing for cooper-

[1] States which have enacted rehabilitation laws are Massachusetts, in 1918, and the following in 1919: California, Illinois, Minnesota, Nevada, New Jersey, North Dakota, Oregon, Pennsylvania, and Rhode Island. Full information is not at hand as to the current year, but laws have been enacted in New York and Virginia this year.

ation with the States in the vocational rehabilitation "of persons disabled," meaning thereby "any person, who by reason of a physical defect or infirmity, whether congenital or acquired by accident, injury, or disease, is, or may be expected to be, totally or partially incapacitated for remunerative occupations." Instead of acting on this measure the House passed quite a similar one on October 17, 1919, which it transmitted to the Senate for its consideration. On April 12, 1920, the Senate acted by substituting its measure for that sent over from the House, and a conference was requested. No conference was ever held, but the Senate's measure was referred to the Committee on Education. On May 25, 1920, the House took up the Senate measure under a special rule and agreed to its acceptance on a motion to concur in the Senate amendment. The bill was approved by the President on June 2.

It is apparent from the scope of the act that it is much wider than if restricted to persons disabled by injuries received in industry, and the inclusion of persons suffering from congenital disability or disease met with some opposition. The term "rehabilitation" is defined as meaning "the rendering of a person disabled fit to engage in a remunerative occupation." The act appropriates $750,000 for the fiscal year ending June 30, 1921; and "for the fiscal year ending June 30, 1922, and thereafter for a period of two years, the sum of $1,000,000 annually." This amount is to be divided among the States prorated according to their population, not less than $5,000 per year to be allotted to any State. States are to furnish dollar for dollar for any Federal aid accepted, and plans of administration, courses and methods of instruction, qualifications of teachers, directors, etc., and methods of placement are to be approved by the Federal Board of Vocational Education. The act is in effect a supplement to the Smith-Hughes Vocational Act of 1917, and contemplates administration in the various States by the same boards that are provided for to cooperate under the Smith-Hughes Act. The Federal board is allowed a special appropriation of $75,000 annually for the four-year period contemplated for the operation of the act under its initial enactment, for the purpose of making studies as to the rehabilitation of disabled persons and their placement in suitable or gainful positions and for administrative costs.

Constitutionality of the Seamen's Act Upheld.

THE United States Supreme Court recently handed down an important decision interpreting section 4 of the Seamen's Act of March 4, 1915 (38 Stat., 1164), which relates to the payment of the wages of seamen. The section provides that every seaman on board a vessel is entitled to demand and have paid to him by the master of the vessel at every port where the vessel loads or discharges cargo, one-half of the wages which he has then earned, anything in the contract of employment to the contrary being declared void. It is also provided that in the event of the refusal of the master to pay one-half the wages due, the seaman then becomes entitled to full payment of his wages and can resort to the United States courts to enforce his rights under the act. The act specifically includes foreign seamen on board foreign vessels while in harbors of the United States.

In this case (Strathearn S. S. Co. *v.* Dillon, 40 Sup. Ct., 350) Dillon, a British subject, shipped on board a British vessel in Liverpool, England, under shipping articles which stated that the voyage was to end at Liverpool in not more than three years and that no wages were to be paid until the end of the voyage. This agreement was made in May, 1916. When the vessel arrived at Pensacola, Fla., in July, 1916, Dillon, in accordance with the above provision of the United States seamen's act, made a demand for one-half of his wages which he had then earned. The master of the vessel refused this demand, whereupon Dillon filed in the district court of the United States a libel against the ship for the entire amount due him.

The district court found against Plaintiff Dillon, upon the ground that his demand, because made within five days after the arrival of the vessel in an American port, was premature. Dillon appealed to the circuit court of appeals which reversed this decision and held that he was entitled to a recovery (256 Fed., 631, 168 C. C. A., 25). This decree was brought before the United States Supreme Court by the Strathearn Steamship Co. on a writ of error. The Supreme Court affirmed the decision in favor of Dillon.

The contentions of the steamship company were (1) that the act applied to American seamen only and therefore could not be invoked by a British subject, and (2) that the act is unconstitutional in that it is destructive of contractual rights.

Both these points were resolved against the company. In deciding the first point the court said in part:

> But, taking the provisions of the act as the same are written, we think it plain that it manifests the purpose of Congress to place American and foreign seamen on an equality of right in so far as the privileges of this section are concerned, with equal opportunity to resort to the courts of the United States for the enforcement of the act.

In deciding in favor of the constitutionality of the act, the court continued as follows:

> We come then to consider the contention that this construction renders the statute unconstitutional as being destructive of contract rights. But we think this contention must be decided adversely to the petitioner upon the authority of previous cases in this court. The matter was fully considered in Patterson *v.* Bark Eudora (190 U. S., 169, 23 Sup. Ct., 821, 47 L. Ed., 1002), in which the previous decisions of this court were reviewed, and the conclusion reached that the jurisdiction of this Government over foreign merchant vessels in our ports was such as to give authority to Congress to make provisions of the character now under consideration; that it was for this Government to determine upon what terms and conditions vessels of other countries might be permitted to enter our harbors, and to impose conditions upon the shipment of sailors in our own ports, and make them applicable to foreign as well as domestic vessels. Upon the authority of that case, and others cited in the opinion therein, we have no doubt as to the authority of Congress to pass a statute of this sort, applicable to foreign vessels in our ports and controlling the employment and payment of seamen as a condition of the right of such foreign vessels to enter and use the ports of the United States.

Although, as above stated, the constitutionality of the seamen's act had been previously sustained, the particular point here involved had never before been decided and for this reason the case was looked upon by the seamen's unions as a test case. The best legal talent obtainable was engaged by the organized seamen of America, and the result, it was said, "was as anticipated—a unanimous verdict for the constitutionality of the seamen's charter of freedom." It has long been the contention of American seamen that the United States by setting a high standard for the employment and protection of its

seamen would eventually compel other countries to bring their standards up to the same level. The above decision has for this reason been hailed by the organized seamen as a distinct triumph, and an advance toward this end. The importance attached to this case is indicated by the fact that in addition to the counsel for the parties, representatives of the British embassy and the United States were permitted to appear by special leave.

Austrian Law Establishing Chambers of Labor.

FOR decades Austrian wage earners have repeatedly (the first time in 1848) demanded that a legal institution be created for the representation of their interests. This demand has finally been realized through the recent enactment by the National Assembly of a law establishing chambers of labor (Arbeiterkammern).[1] The basic idea of the demand of the wage earners and also of the law is that, as corporations representing the interests of other classes of the population, such as chambers of commerce and industry (Handels- und Gewerbekammern), bar associations (Advokatenkammern), medical associations (Aerztekammern), etc., have been in existence for a long time, like corporations should also be created for the safeguarding of the interests of manual workers and salaried employees. Consistent with this idea the wage earners have always opposed the creation of so-called joint industrial councils (Arbeitskammern), in which both employers and employed were to be equally represented, and have insisted on the creation of chambers of labor in which the wage earners alone should be represented. Briefly summarized the provisions of the new law are the following:

The law states that it shall be the task of the chambers of labor to represent the economic interests and to promote the economic and social conditions of manual workers and salaried employees in industry, commerce, transportation, and mining. The duties assigned to the chambers are:

1. To render opinions and submit proposals to the authorities and legislative bodies as to the regulation of working conditions, protective labor legislation, workmen's insurance, the labor market, and on all matters of trade, industry, commerce, and transportation which directly or indirectly affect the interests of manual workers or salaried employees, and finally as to matters relating to housing, nutrition, hygiene, and education of the people.

2. To render opinions on bills, laws, and other legal regulations, dealing with matters enumerated under 1.

3. To render opinions as to the creation and organization of public institutions for the promotion of trades, industry, commerce, and transportation.

4. To cooperate in the industrial and economic administration and in measures and institutions relating to labor relations or the improvement of the economic and social situation of manual workers

[1] Die Gewerkschaft, vol. 12, No. 10. Vienna, Mar. 9, 1920.

and salaried employees, whenever special laws and regulations provide such cooperation.

5. To send representatives into other corporations and authorities or make proposals for appointments to such corporations or authorities whenever such action is provided by special laws or regulations.

6. To keep lists of occupational organizations of manual workers and salaried employees in existence within the district of the chamber.

7. To cooperate in the compilation of labor statistics and in investigations of social and economic conditions of manual workers and salaried employees.

8. To create and administer or to cooperate in the creation and administration of institutions for the improvement of the economic and social situation of manual workers and salaried employees, especially for the purpose of concluding collective agreements, the procuring of employment, the combating of unemployment, housing work, care for the nutrition and health of manual workers and salaried employees and of their families, promotion of vocational, general mental and physical training of manual workers and salaried employees, and of the growing generation.

The law orders all national Government offices, State governments, and councils to submit to the chambers of labor bills as well as regulations for the enforcement of laws affecting the interests of manual and nonmanual workers. It places the chambers of labor within the organization and under the supervision of the ministry for social administration.

Each chamber of labor is to be composed of two sections—a section for manual workers and one for salaried employees. A chamber may be composed of not less than 30 and not more than 100 members. The election of members is to be effected according to the principles of proportionate representation, by direct secret ballot, and for a term of 5 years. Each section forms a separate electorate.

Every manual worker or salaried employee, without distinction of citizenship, who on election day has completed his eighteenth year of age and has been employed at least two months within the district of the chamber of labor has the right to vote. All citizens of German Austria who on election day have completed their twenty-fourth year of age and have been employed as manual workers or salaried employees for at least 3 years are also eligible.

The newly elected chamber of labor is to be convened by the supervisory authority. At its initial session it shall elect from among its midst a president, whose election must be confirmed by the minister for social administration. The president is the legal representative of the chamber. The sessions of the chamber shall as a rule be public.

The costs of the chambers of labor are to be borne by the manual workers and salaried employees themselves. Contributions for the chambers of labor shall as a rule be collected by means of assessments upon the contributions for sick funds. The amount of these assessments is to be determined by the chambers of labor.

A chamber of labor is to be created in every locality in which a chamber of commerce and industry exists, i. e., in the cities of Vienna, Linz, Gratz, Leoben, Klagenfurt, Innsbruck, and Feldkirch.

At least once a year the directorates of all the chambers of labor are to meet in conference for the purpose of discussing matters of common interest. The chambers of labor are authorized to convene manual workers' and salaried employees' conferences to be attended by representatives of manual workers' and salaried employees' organizations and by the members of the manual workers' and salaried employees' sections of the chambers. These conferences are intended to bring about closer relations between the chambers of labor and the trade-unions.

Austrian Domestic Service Law.

DIE Gewerkschaft (Vienna), the official organ of the Austrian trade-unions for March 2, 1920, reports that after long discussions the Austrian National Assembly has passed a protective law for domestic servants. The enactment of the bill was greatly retarded by the contention of the bourgeois parties that the subject dealt with came within the competence of the provincial diets and not within that of the State. The real reason why these circles opposed the bill was that they disliked its basic idea of granting to domestic servants the same legal protection as that already enjoyed by industrial and agricultural workers. The regulation of the hours of labor of domestic servants aroused their strongest opposition.

Consequent to this opposition the bill underwent numerous amendments which weakened it considerably. The terms of the law as finally enacted are the following:

The law is applicable only to persons employed exclusively in domestic service and not to those simultaneously active in an agricultural establishment of their employer. Immediately on entering employment each domestic servant must, on his request, be issued a labor contract showing his rights and duties.

The wages of domestic servants are to be fixed according to local usage. Wages must be paid not later than on the first of each month. Servants not receiving board must be paid the board allowance agreed upon, semimonthly and in advance. If they are furnished board, it must be wholesome and sufficient and as a rule be the same as that furnished to adult healthy members of the family. Servants' quarters must be so constituted that they do not endanger their health and morals. Their sleeping rooms must have doors that can be locked from the inside, and they are to be furnished a safe, lockable receptacle for their personal belongings.

The law provides a daily uninterrupted rest of at least 9 hours, which, as a rule, shall fall within the period between 9 p. m. and 6 a. m. In addition, servants must be allowed a total of two hours' rest for the partaking of the principal meals. Servants under 16 years of age are to be allowed an uninterrupted daily rest of 11 hours and 3 hours' rest during their working time. Any curtailing of rest periods caused by work not permitting of delay must be compensated extra.

Domestic servants must be granted 8 hours' leave every second Sunday, this leave to begin not later than 3 p. m. If leave is to exceed 8 hours it must be previously agreed upon with the employer. In addition, they are to be given 4 hours' leave on one week day of each week, the leave to begin not later than 5 p. m. They must moreover be granted time for attending religious services. During the first year of his service each servant is entitled to one week of annual leave, during the second year to two weeks, and during the fifth year to three weeks. During his annual leave he is to receive full pay and in addition a subsidy in the following amount: In case of one week's leave, half a month's pay; in case of two weeks' leave, one month's pay; and in case of three weeks' leave, one and one-half month's pay. If a domestic servant is discharged by an employer with the obvious intent of depriving the servant of his leave, the latter may claim compensation in the amount of the allowance that would have been due him had he been granted leave.

In case of sickness a domestic servant is entitled to free medical treatment and medicines. If taken to a hospital he is, in addition, entitled to full pay. If the employer moves to another locality, the servant is under no obligation to follow him and can not be discharged for refusing to do so, and, as long as the service contract is not terminated, the servant may in addition to his pay also claim suitable compensation for the failure of the employer to furnish him board.

The term for giving notice is as a rule fixed at two weeks. This term may not be reduced to less than one week by agreement and must be of equal length for both parties. If unequal terms have been agreed upon, the longer term shall be valid. After having received notice of his discharge the servant is entitled to four hours' leave on two week days in order that he may have opportunity to find another place of employment. If a servant leaves his employment without valid reason before the expiration of his service contract the employer may either demand his return into his service or claim damages for breach of contract. If, on the other hand, an employer discharges a servant without valid reason, the latter, without prejudice to his claim for damages, has the right to demand full pay for the period up to the expiration of his service contract; he is moreover entitled to compensation for any amount he could have saved during that time or earned through other service. An entirely new feature of the present law is the provision which stipulates that after 10 years' continuous service with the same employer the servant is on discharge entitled to receipt of a bonus in the amount of three months' pay. This bonus increases by 5 per cent for each additional year of continuous service up to a maximum amount equivalent to one year's pay. If the service relation is, however, terminated through fault of the servant the latter loses his claim to a service bonus.

Whenever a servant leaves his service the employer is obligated to issue him a certificate which shall merely state the duration and nature of the service. Each servant must be provided with a service card issued to him by the proper communal authority.

The law contains special provisions for servants rendering services of a higher order, such as governesses, tutors, etc. They shall be furnished a separate room, whenever possible, and be granted a rest

period of three hours per day. After one year's service they are entitled to two weeks' leave and after two year's service to four weeks. They must be given 6 weeks' notice in case of discharge.

Disputes between masters and domestic servants are to be settled by the ordinary courts, i. e., by the court of that locality in which the servant was in service at the time he brought suit. Regulations to be issued for the enforcement of the present law shall, however, provide for the establishment of special conciliation boards for the settlement of disputes between masters and domestic servants.

The law became effective May 1, 1920.

LABOR ORGANIZATIONS.

European Trade-Union Statistics.

Compiled by ALFRED MAYLANDER.

Germany.

ACCORDING to a recent issue of the Correspondenzblatt,[1] the General Federation of German Trade-Unions, with which at present 54 federations (*Verbände*) of trade-unions are affiliated, has a membership of more than 7,500,000. In the following table is shown the membership of affiliated federations having more than 100,000 members:

FEDERATIONS OF THE GERMAN FREE TRADE-UNIONS WITH A MEMBERSHIP OF MORE THAN 100,000 AT THE END OF FEBRUARY, 1920.

Federation.	Membership.	
	Before the war.	End of February, 1920.
Metal workers	531,991	1,600,000
Agricultural workers	22,531	650,000
Factory workers	207,330	600,000
Transport workers	228,207	540,000
Textile workers	133,034	450,000
Building trades	309,562	430,430
Mine workers	101,956	400,000
Railway men		400,000
Woodworkers	192,465	370,000
Salaried employees	35,219	367,000
Municipal workers	54,522	269,915
Tailors	49,145	136,000
Total	1,865,962	6,213,345

Thus the above 12 federations comprise more than 6,200,000 members, or 83 per cent of the entire membership of the General Federation. Ten more federations have a membership of more than 50,000, 11 of 20,000 to 50,000, 7 of 10,000 to 20,000, 12 of 1,000 to 10,000, and 2 of less than 1,000 members.

Of the entire membership somewhat more than 5,000,000 belong to industry, handicraft, and mining, 917,000 to commerce and transport, 650,000 to agriculture and forestry, 670,000 to State and municipal undertakings, 157,000 to the hotel and restaurant trade and musical and theatrical callings, and 38,000 to the domestic service group.

Austria.

THE annual report of the executive committee of the Austrian Federation of Trade-Unions (*Gewerkschaftskommission Deutschösterreichs*) for the year 1919[2] shows that the total paying mem-

[1] Correspondenzblatt der Generalkommission der Gewerkschaften Deutschlands. Berlin, Mar. 6, 1920.
[2] Die Gewerkschaft. Vienna, Mar. 16, 1920.

bership of the unions affiliated with the federation was 378,381, as compared with 262,808 in 1918. The membership movement during the period 1913 to 1919 is shown in the following table:

PAYING MEMBERSHIP OF THE AUSTRIAN FEDERATION OF TRADE-UNIONS, 1913 TO 1919.

Year.	Paying membership.	Increase (+) or decrease (−).
1913	331,816	
1914	292,103	− 39,713
1915	154,281	−137,822
1916	130,697	− 23,584
1917	142,925	+ 11,598
1918	262,808	+120,513
1919	378,381	+115,573

It should be noted that the membership figures shown in the preceding table include only paying members, i. e., members having made 52 weekly contributions to their union during the year. During 1918 and 1919 unemployment was very extensive in German Austria and a large number of organized workers did not pay regularly their union dues. The actual membership of the Austrian trade-unions must therefore have been considerably larger than that shown in the table. In comparing the figures for 1919 with those of preceding years it should be considered that the peace treaty separated from Austria all crown lands of non-German nationality.

The increase in membership during the year 1919 is chiefly due to the affiliation of numerous organizations of nonindustrial wageworkers, such as bank employees, policemen's unions, postal and telegraph employees, domestic servants, hospital nurses, etc. Through the affiliation of these organizations the Federation of Austrian Trade-Unions has become the official representative not only of the industrial workers of Austria but of Austria's entire wage-earning population.

Czecho-Slovakian Republic.

A BROCHURE [3] issued by Rod. Tayerle, secretary-general of the General Federation of Czecho-Slovak Trade-Unions, contains the following data as to membership of the unions affiliated with this federation.

MEMBERSHIP STATISTICS OF THE GENERAL FEDERATION OF CZECHO-SLOVAK TRADE-UNIONS, 1897-1918.

Year.	Federations.	Unions.	Membership.	
			Total.	Female.
1897	68	22	7,102	502
1907	59	796	71,001	2,393
1912	53	1,449	107,265	8,093
1914	50	1,135	55,175	5,268
1916	49	753	23,932	3,259
1917	50	766	42,728	6,468
1918	50	1,178	161,247	23,824

[3] Les Syndicats Professionnels Tchécoslovaques. Paris, 1919. 22 pp.

Data for the year 1919 are not available. The brochure states, however, that at the end of June, 1919, 42 reporting federations show a membership of 450,896, of which 98,150 were women, and estimates the total membership, inclusive of nonreporting federations, at 500,000. This large increase is chiefly due to the affiliation of the German trade-unions in the German-speaking districts of Bohemia and Moravia with the Czecho-Slovak General Federation.

The strongest federations represented in the general federation are those of the metal workers with 95,130 members; agricultural workers with 90,000 members; miners with 49,654 members; railroad men with 42,262 members; unskilled workers with 35,656 members; textile workers with 29,616 members; building trades workers with 12,009 members; woodworkers with 14,769 members; and glass workers with 12,500 members. Women are strongly represented in agricultural unions (50,000), textile workers' unions (17,321), and unskilled workers' unions (7,996).

In 1918 the 50 federations affiliated with the general federation had receipts amounting to 2,544,846 crowns ($516,603.74, par) and expenditures amounting to 1,828,903 crowns ($371,267.31, par). Their combined capital was 2,875,077 crowns ($583,640.63, par). They disbursed in benefits 451,107 crowns ($91,574.72, par), of which 63,449 crowns ($12,880.15, par) were for strike benefits and 124,366 crowns ($25,246.30, par) for sick benefits. The general federation publishes a semimonthly bulletin, Odborové Sdruženi československe, and since 1915 also a journal, Zájmi Žen, for its female members.

Hungary.

ACCORDING to an article in the Correspondenzblatt [4] the trade-unions in Hungary had some 500,000 members in November, 1918. An immediate result of the revolution was that nearly all classes of workers, including railway men, civil-service employees, private salaried employees, teachers, brain workers, etc., began to organize, whereby it appeared that the new trade-unionists were more radical than the most extreme of the old organizations. The brain workers, especially, became ardent adherents of the soviet dictatorship, while the old unions, without exception, were opposed to it. The failure of the old trade-unions to support the soviet government was the prime cause of its collapse.

The first effect of the debacle of the communistic régime was the closing of all industrial establishments. The owners took back the socialized undertakings into their own hands, dismissed the workers, and proceeded to take stock of what was left to them. Extensive unemployment continues up to the present date, scarcely 10 to 15 per cent of the workers being employed. In Budapest about 200,000 workers are idle, and in the provincial towns matters are not much better.

The radicalism of the new unions founded since November, 1918, did not stand the test of such severe trials. Part of them, especially the unions of the brain workers, speedily took refuge in the Christian-National camp and many of the newly founded ultraradical unions became now ultra reactionary. Thus ended the supercommunists of

[4] Correspondenzblatt der Generalkommission der Gewerkschaften Deutschlands. Berlin, Mar. 6, 1920.

the Hungarian commune. Although the old conservative unions were opposed to the soviet, the new Government seizes every pretext to persecute them. In the provinces the military functionaries of the new Government arbitrarily dissolved all trade-unions and seized their funds. Since August, 1919, thousands of organized workers have been thrown into prison or interned in concentration camps, although no indictable offense has been proved against them.

Holland.

THE Dutch Federation of Trade-Unions (*Nederlandsch Verbond van Vakvereenigingen*) reports [5] that on January 1, 1920, the movement numbered 247,870 members. During 1919 the membership increased by 56,805, as against an increase of 28,000 in 1917, and 31,000 in 1918. During the last quarter of 1919 the number of male members increased by 17,120 and that of female members by 1,412

Denmark.

THE progress of the trade-union movement in Denmark during 1919 is illustrated in Social-Demokraten [6] from figures published by the Danish Trade-Union Association.

The total number of workers organized in unions was 360,016 at the end of 1919. Of these, 277,392 were affiliated with the association, as compared with 255,150 at the end of 1918. Of the affiliated organizations the growth of membership has been largest in the Danish General Workers' Union, with an increase of 5,454, in the Textile Workers' Union with 2,754, in the Agricultural Workers' Union with 2,000, in the Municipal Workers' Union with 1,628, the Smiths' and Machinists' Union with 1,231, and the Railway men's Union with 1,202.

Among the nonaffiliated organizations the telephone workers record an increase from 3,200 to 5,300 members, the mercantile clerks from 19,800 to 29,770. The Bricklayers' Union shows a decrease in membership from 8,024 to 6,324.

Switzerland.

IN SWITZERLAND the individual trade-unions were so busy during the last two years with wage movements, the development of their organization, and benevolent institutions that their reports to their central organization, the Gewerkschaftsbund, were greatly delayed. Owing to this delay the Gewerkschaftsbund was but lately able to publish statistics on the Swiss trade-union movement for the year 1918.[7] At the end of that year the unions affiliated with the Gewerkschaftsbund had 177,143 members, of which 26,647 were women. The increase in membership over the preceding year was 29,446. The report states, however, that 85,076 new members were admitted during 1918. As the increase in membership at the end of the year was only 29,446 there must have been a large number of resignations. During the year under review the switchmen's, loco-

[5] Rotterdamsche Courant. Rotterdam, Mar. 27, 1920.
[6] Social-Demokraten. Copenhagen, Mar. 17, 1920.
[7] Die Gewerkschaft. Vienna, Feb. 24, 1920.

motive engineers', and trainmen's unions are the only ones having experienced a decrease in membership. This decrease was largely due to curtailment in the operation of trains. The following unions showed the largest increases in membership: Building trades, workers in communal and State employment, workers in foodstuff industries, mercantile and transport establishments, woodworkers, textile and metal workers. The cities having the largest number of organized workers were Zürich (22,662), Basel (14,172), and Bern (12,385). The three cantons of the same name had likewise the largest number of trade-union members among their population, the number of trade-union members being 44,367 in the Canton of Zürich, 35,934 in the Canton of Bern, and 14,172 in the Canton of Basel (city).

The membership dues had to be increased considerably during 1918, owing to increased expenditures. In 1917 the highest weekly membership dues were 1.85 francs (35.7 cents, par); in 1918, however, 2.25 francs (43.4 cents, par). The annual receipts of the trade-unions totaled 5,242,808 francs ($1,011,861.94, par). Included in this sum are State and cantonal subsidies in the amount of 169,918 francs ($32,794.17, par) for unemployment funds and of 156,900 francs ($30,281.70, par) for sick funds. The expenditures of the union amounted to 5,347,394 francs ($1,032,047.04, par). and thus exceeded the receipts for the year. Seventy-one and four-tenths per cent of the expenditures were for benefits.

The Gewerkschaftsbund reports 1,800 wage movements for the year 1918, affecting 9,253 establishments and 325,240 workers. The great majority of these movements, 1,533 affecting 7,786 establishments with 300,868 workers, did not involve any stoppage of work. In 264 instances, affecting 1,464 establishments and 24,318 workers, the wage movement culminated in a strike, and in four instances affecting three establishments and 64 workers in a lockout. The total loss of wages through labor disputes was 2,230,294 francs ($430,446.74, par). Strike benefits for 289,860 days were paid in the amount of 894,650 francs ($172,667.45, par) by central labor organizations and in the amount of 162,967 francs ($31,452.63, par) by local labor organizations. The average number of days lost per striker was 12. Most of the wage movements terminated with partial success for the workers, only 71, or 4 per cent, failed entirely. The wage increases obtained totaled 2,562,064 francs ($494,478.35, par) per week. The curtailment of hours of labor shows a total gain of 320,614 hours per week, or of 3½ hours for the individual worker. Collective agreements affecting 2,414 establishments and 15,274 workers were concluded in 202 instances.

The report states that at the end of the first six months of 1919 the membership of the unions affiliated with the Gewerkschaftsbund had passed the 200,000 mark.

STRIKES AND LOCKOUTS.

Strikes and Lockouts in the United States, 1916, 1917, 1918, and 1919.

Compiled by EDSON L. WHITNEY.

DURING the past six years the United States Bureau of Labor Statistics has kept a record of such strikes in this country as have come to its attention. The department has no authority to require reports relative to strikes from anyone, and therefore is obliged to obtain its information in such way as it can from such sources as are available. During these six years this information has been obtained from agents of the Bureau in the field, reports of commissioners of conciliation of the Department of Labor and other similar boards, reports of the various State labor boards, lists of strikes issued by labor, trade, and other organizations, and from clipping bureaus, supplemented by an examination of 25 daily papers printed in the more important industrial cities of the country, 100 or more labor papers, as many trade-union periodicals, and 20 leading trade papers. During the year 1919, 6,931 circulars of inquiry asking information in regard to about 3,500 reputed strikes and lockouts were sent to employers reported to have had strikes in their establishments and to officials of unions whose members had been concerned in or were believed to have knowledge of labor troubles. Of this number 2,222 were returned answered in whole or in part, 351 were returned undelivered for various reasons, and the remainder were unanswered. In addition 206 letters were sent. While this report, based on the data secured from the above-mentioned sources, omitting such reputed strikes as the returned schedules of inquiry indicated had been erroneously reported, is not based on a complete list of all strikes that have occurred in the country during the years under review, for such a list is unobtainable, it is believed that no strikes of importance have failed to come to the attention of the Bureau, and that the report is reasonably complete. Statistics for the four years 1916, 1917, 1918, and 1919 are given for purposes of comparison of two years of the war with the years immediately preceding and following.

The table following shows the number of strikes and lockouts beginning in each month during 1916, 1917, 1918, and 1919:

TABLE 1.—NUMBER OF STRIKES AND LOCKOUTS BEGINNING IN EACH MONTH, 1916, 1917, 1918, AND 1919.

Year.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Month not stated.	Total.
Strikes:														
1916.....	180	203	289	419	604	340	310	318	247	257	193	147	174	3,681
1917.....	274	204	308	431	451	313	444	353	340	317	251	184	454	4,324
1918.....	183	212	300	308	385	289	279	273	197	145	202	239	220	3,232
1919.....	184	183	175	248	388	303	360	373	377	296	145	94	127	3,253
Lockouts:														
1916.....	8	3	5	15	13	14	3	8	5	4	4	2	24	108
1917.....	14	7	10	14	12	10	4	7	9	4	6	12	17	126
1918.....	8	11	11	11	6	6	6	5	10	.....	5	10	16	105
1919.....	5	7	6	14	25	12	6	10	13	8	6	6	3	121
Total:														
1916.	188	206	294	434	617	354	313	326	252	261	197	149	198	3,789
1917.	288	211	318	445	463	323	448	360	349	321	257	196	471	4,450
1918.	191	223	311	319	391	295	285	278	207	145	207	249	236	3,337
1919.	189	190	181	262	413	315	366	383	390	304	151	100	130	3,374

The large increase in number of strikes during the month of May in each year is accounted for by the fact that the trade agreements in many industries terminate on the 30th day of April and the unions very generally ask for an increase in wages in making the new agreement with their employers. Reports for the closing months of the year 1919 are incomplete, since reports, aside from those obtained from the daily and weekly papers and periodicals, frequently do not reach the Bureau until several months after the strike has ended. Corrected figures for these months will therefore undoubtedly show an increase over those here given.

Although the number of strikes during 1919 was not appreciably larger than in 1918 and was less than in 1916 or 1917, the number of persons on strike during the year 1919 was greatly in excess of the number on strike in any of the three preceding years, due to the number of strikes in which large numbers of persons were involved. The strike in which the largest number of persons was involved in 1916 was the men's clothing strike in New York City in December of that year, involving 60,000 employees. No strike in 1917 involved as many as 40,000 persons. In 1918 the strike involving the largest number of persons was that of machinists in northern New Jersey in July, where 60,000 persons struck.

In 1919 there were nine disturbances in each of which 60,000 or more persons were directly concerned: A general strike in Tacoma and Seattle in February in sympathy with the metal-trades strikers, in which 60,000 persons were involved; 65,000 employees in the Chicago stockyards struck in August; 100,000 longshoremen along the Atlantic coast struck in October; 100,000 employees in the shipyards of New York City and vicinity struck in October; 115,000 members of the building trades were locked out in Chicago in July; 125,000 in the building trades in New York City struck in February; 250,000 railroad shop workers struck in August; 367,000 iron and steel workers struck in September; and 435,000 bituminous coal

miners struck in November. The number of persons concerned in these nine strikes and lockouts was upward of 1,600,000, while the total number of persons involved in strikes and lockouts during 1919 was 4,112,507.

The strikes of 1919 have not been accompanied by the violence and loss of life that have at times characterized the strikes of former years, due perhaps to the fact that employers more frequently closed their establishments during the strike, and employed strike breakers in a less number of cases. On the other hand, the number of working days lost in 1919 increased greatly and the average duration of strikes was nearly twice that in each of the preceding three years. It is difficult to particularize, for many of the strikes involving a few thousand persons caused the public more inconvenience than some of those involving many times that number. Many of the larger strikes occurred in New York City and vicinity, where, in addition to those already mentioned, 35,000 waist and dress makers struck in January, 50,000 cloak and suit makers in May, 25,000 shirt makers in July, 50,000 men's clothing workers in October, 16,000 millinery workers in September, 10,000 rag pickers and paper sorters in March, as many paper box makers in August, and as many pressmen in October, 14,000 painters in August, 15,000 shoe workers in February, 15,000 street car men in August, 16,000 marine workers in January, 17,000 harbor workers in March, 18,000 teamsters in October, 20,000 longshoremen in March, 25,000 shipbuilders in November, 40,000 tobacco workers in July, and 40,000 tug and ferrymen in October. In March, 12,000 woolen operatives struck in Passaic, 24,000 silk workers in Paterson in February and 17,000 again in August, 32,000 textile workers in Lawrence in February, 30,000 in New Bedford in May, and 35,000 in Fall River in December. In July, 40,000 marine workers along the Atlantic coast struck, 20,000 meat cutters in cities along the Atlantic coast in August and again in October, 12,000 telephone operators in New England in April, 15,000 street railway men in Chicago in July, 10,000 building laborers in Chicago in June, followed by 13,000 carpenters in July, 15,000 carpenters in Columbus, Ohio, in May, 17,000 machinists in Toledo in May, 15,000 miners in Illinois in July, 10,000 railroad shopmen in western Pennsylvania in October, 15,000 steel workers in Pennsylvania in July, 43,000 anthracite miners in Pennsylvania in September, 10,000 tobacco workers in Philadelphia and 11,000 in Allentown in July, 15,000 in Porto Rico in January, and as many more in Tampa in October, 10,000 men in the building trades in Dallas in June, 28,000 metal workers in Seattle in January, and 25,000 workers in the shipyards of San Francisco and vicinity in February and 40,000 more in October.

The table following shows the number of strikes and lockouts in 1916, 1917, 1918, and 1919, by States and by sections of the country.

TABLE 2.—NUMBER OF STRIKES AND LOCKOUTS BEGINNING IN EACH YEAR, BY STATES AND SECTIONS, 1916, 1917, 1918, AND 1919.

State or section.	Strikes.				Lockouts.			
	1916	1917	1918	1919	1916	1917	1918	1919
Alabama	14	17	13	15	1	3	.....	1
Alaska	3	5	2	3	.....	.....	1	.....
Arizona	7	20	3	7	.....	.....	1	.....
Arkansas	20	36	11	6	.....	.....	.....	.....
California	54	105	92	89	1	7	2	6
Canal Zone	4	.....	.....	1	.....	.....	.....	.....
Colorado	17	46	29	30	.....	2	3	1
Connecticut	325	178	90	120	1	.....	2	3
Delaware	12	17	14	5	.....	.....	.....	.....
District of Columbia	7	14	13	8	1	.....	.....	1
Florida	9	14	18	28	.....	2	2	.....
Georgia	8	26	37	34	.....	2	3	4
Hawaii	4	1	1	.....	.....	.....	.....	.....
Idaho	5	32	10	10	.....	.....	.....	.....
Illinois	149	276	237	252	10	6	11	10
Indiana	70	65	68	91	5	8	8	9
Iowa	25	63	39	50	1	2	2	6
Kansas	15	51	40	44	.....	2	1	1
Kentucky	11	37	17	25	2	1	2	.....
Louisiana	7	39	16	28	1	.....	.....	2
Maine	30	40	36	36	.....	.....	.....	2
Maryland	45	56	69	32	3	3	1	.....
Massachusetts	374	342	341	376	9	11	4	6
Michigan	66	62	59	79	5	2	1	.....
Minnesota	24	52	40	49	6	1	.....	1
Mississippi	4	13	4	2	.....	.....	1	.....
Missouri	90	117	100	63	7	5	5	2
Montana	14	74	32	19	1	3	1	2
Nebraska	21	27	11	17	.....	1	.....	.....
Nevada	.....	2	6	4	.....	.....	.....	.....
New Hampshire	20	20	17	32	.....	.....	.....	1
New Jersey	411	219	138	171	6	8	.....	4
New Mexico	.....	4	2	.....	.....	.....	.....	.....
New York	577	696	668	515	15	15	21	7
North Carolina	7	7	12	19	1	.....	1	3
North Dakota	.....	2	3	.....	.....	.....	.....	.....
Ohio	276	265	188	214	14	14	9	8
Oklahoma	24	33	17	26	.....	2	2	2
Oregon	22	57	18	32	1	1	.....	1
Pennsylvania	566	481	304	265	8	13	7	10
Porto Rico	23	6	5	3	.....	.....	.....	.....
Rhode Island	76	103	53	74	1	2	.....	1
South Carolina	5	7	3	6	.....	.....	.....	.....
South Dakota	.....	2	3	3	.....	1	.....	.....
Tennessee	24	40	23	34	2	2	3	8
Texas	28	56	37	51	.....	.....	3	4
Utah	3	21	12	20	.....	.....	2	2
Vermont	10	8	9	12	.....	.....	.....	.....
Virginia	14	34	36	24	2	1	1	2
Washington	57	290	126	78	1	4	2	.....
West Virginia	39	64	49	56	1	.....	1	4
Wisconsin	61	55	52	71	2	2	2	7
Wyoming	.....	2	5	3	.....	.....	.....	.....
Interstate	4	25	4	21	.....	.....	.....	.....
Total	3,681	4,324	3,232	3,253	108	126	105	121
North of the Ohio and east of the Mississippi	3,110	2,974	2,400	2,412	80	85	66	72
South of the Ohio and east of the Mississippi	165	304	233	248	9	11	14	20
West of the Mississippi	406	1,046	599	591	19	30	25	29

The largest number of disputes occurred in the leading manufacturing States—New York, Massachusetts, Pennsylvania, Ohio, and Illinois—nearly one-half the strikes being in these States.

The table following shows the number of strikes and lockouts in cities in which 25 or more disputes occurred during 1916, 1917, 1918, or 1919.

TABLE 3.—NUMBER OF STRIKES AND LOCKOUTS IN CITIES IN WHICH 25 OR MORE DISPUTES OCCURRED IN 1916, 1917, 1918, OR 1919

City.	1916	1917	1918	1919	City.	1916	1917	1918	1919
Baltimore, Md	39	36	45	22	New Orleans, La	7	23	15	25
Boston, Mass	62	86	66	96	New York, N. Y	363	484	484	360
Bridgeport, Conn	38	30	13	22	Paterson, N. J	18	27	20	15
Buffalo, N. Y	41	28	24	19	Philadelphia, Pa	74	89	80	60
Chicago, Ill	73	123	100	124	Pittsburgh, Pa	47	37	19	17
Cincinnati, Ohio	29	33	26	36	Providence, R. I	21	46	18	30
Cleveland, Ohio	60	76	39	47	Rochester, N. Y	16	27	35	11
Denver, Colo	8	26	19	22	San Francisco, Calif	23	37	30	33
Detroit, Mich	31	19	18	37	St. Louis, Mo	58	53	70	36
Fall River, Mass	20	13	18	28	Seattle, Wash	15	49	28	18
Hartford, Conn	28	21	8	15	Springfield, Mass	31	27	12	20
Holyoke, Mass	26	9	17	16	Toledo, Ohio	16	16	27	24
Jersey City, N. J	28	24	7	24	Trenton, N. J	25	15	11	4
Kansas City, Mo	20	36	20	16	Wilkes-Barre, Pa	6	25	8	4
Milwaukee, Wis	30	14	11	25	Worcester, Mass	18	12	11	27
Newark, N. J	55	50	36	30	Youngstown, Ohio	27	1	5	13

The table following shows, by sex of persons involved, the number of strikes and of lockouts occurring during the four years under consideration:

TABLE 4.—NUMBER OF STRIKES AND LOCKOUTS BEGINNING IN 1916, 1917, 1918, AND 1919, BY SEXES.

Sex.	Strikes.				Lockouts.			
	1916	1917	1918	1919	1916	1917	1918	1919
Males	3,045	3,513	2,380	2,599	76	99	76	70
Females	122	158	87	86	.....	.....	3	1
Males and females	260	184	263	478	9	6	11	21
Not reported	254	469	502	90	23	21	15	29
Total	3,681	4,324	3,232	3,253	108	126	105	121

In 1919 the employees were connected with unions in 1,811 strikes and 102 lockouts; they were not connected with unions in 135 strikes and 1 lockout; in 27 strikes and 2 lockouts they were not so connected at the time of striking, but organized almost immediately thereafter; in 1,280 strikes and 16 lockouts the relation of employees to unions was not reported. In 1918 the corresponding figures were 1,830 strikes and 73 lockouts, 358 strikes and 4 lockouts, 26 strikes, and 1,018 strikes and 28 lockouts. In 1917 the figures were 2,297 strikes and 95 lockouts, 206 strikes and 3 lockouts, 55 strikes, and 1,766 strikes and 28 lockouts. In 1916 the figures were 2,364 strikes and 94 lockouts, 441 strikes and 5 lockouts, 70 strikes and 1 lockout, and 806 strikes and 8 lockouts.

The causes of strikes and lockouts were numerous. Aside from wages few strikes occurred in which the cause was confined to one matter in dispute. The principal causes are shown in the table following.

TABLE 5.—PRINCIPAL CAUSES OF STRIKES AND LOCKOUTS BEGINNING IN 1916, 1917, 1918, AND 1919.

Matter of dispute.	Strikes.				Lockouts.			
	1916	1917	1918	1919	1916	1917	1918	1919
Increase of wages	1,290	1,554	1,378	999	11	17	14	24
Decrease of wages	33	34	34	80	2	2	2	3
Nonpayment of wages	13	17	31	9	.....	1	.....	.....
Increase of hours	3	18	6	8	4	.....	.....	.....
Decrease of hours	111	127	79	106	2	5	.....	8
Increase of wages and decrease of hours	479	374	251	554	2	4	2	9
Recognition of the union	344	275	188	366	22	39	35	31
Recognition and wages	122	149	95	127	2	5	2	5
Recognition and hours	22	27	18	19	1	1	.....	1
Recognition, wages, and hours	68	56	66	178	5	.....	.....	7
General conditions	59	100	59	65	.....	4	2	.....
Conditions and wages	56	70	52	54	2	1	2	1
Conditions and hours	3	17	2	5	.....	1	.....	.....
Conditions, wages, and hours	25	26	8	37	.....	.....	.....	.....
Conditions and recognition	.....	13	7	14	.....	.....	.....	.....
Discharge of foreman demanded	17	37	54	15	.....	1	.....	.....
Discharge of employees	122	204	138	141	5	3	.....	.....
Employment of nonunion men	70	76	62	.....	4	1	.....	.....
In regard to the agreement	38	80	42	33	2	3	1	4
New agreement	37	22	4	36	3	2	.....	.....
Sympathy	32	70	34	109	1	1	1	.....
Jurisdiction	19	21	16	15	.....	.....	.....	1
Miscellaneous	120	183	172	91	7	5	9	15
Not reported	598	774	436	201	33	30	35	12
Total	3,681	4,324	3,232	3,253	108	126	105	121

The number of persons involved in strikes and lockouts is shown in the table following:

TABLE 6.—NUMBER OF STRIKES AND LOCKOUTS BEGINNING IN 1916, 1917, 1918, AND 1919, BY CLASSIFIED NUMBER OF PERSONS INVOLVED.

Number of persons involved.	Strikes.				Lockouts.				Number of persons involved.	Strikes.				Lockouts.			
	1916	1917	1918	1919	1916	1917	1918	1919		1916	1917	1918	1919	1916	1917	1918	1919
1 to 10	197	164	143	158	13	7	9	7	501 to 1,000	238	193	139	202	3	1	2	10
11 to 25	345	295	266	250	10	8	11	9	1,001 to 10,000	233	219	200	312	5	4	4	9
26 to 50	412	341	328	310	15	9	9	13	Over 10,000	22	67	16	53	1	1	1	1
51 to 100	413	358	344	357	7	3	13	13	Not reported	1,078	2,045	1,152	845	44	80	34	27
101 to 250	395	358	369	436	4	10	13	19									
251 to 500	348	284	275	328	6	3	9	13	Total	3,681	4,324	3,232	3,253	108	126	105	121

In 1919, in 2,399 strikes and 94 lockouts the number of persons involved was reported to be 3,950,411 and 162,096, respectively, or an average of 1,647 in strikes and 1,724 in lockouts. In 1918, in 2,080 strikes and 71 lockouts the number of persons involved was reported to be 1,196,928 and 43,061, respectively, or an average of 575 in strikes and 605 in lockouts. In 1917, in 2,279 strikes and 46 lockouts the number of persons involved was reported to be 1,208,121 and 19,133, or an average of 530 and 416, respectively. In 1916, in 2,603 strikes and 64 lockouts the number of persons involved was reported to be 1,546,735 and 53,182, or an average of 594 and 831, respectively.

TABLE 7.—INDUSTRY GROUPS IN WHICH THE LARGEST NUMBER OF STRIKES AND LOCKOUTS OCCURRED IN 1916, 1917, 1918, AND 1919.

Industry.	Strikes.				Lockouts.			
	1916	1917	1918	1919	1916	1917	1918	1919
Building trades	376	447	416	424	18	21	16	18
Clothing industries	222	483	416	301	5	12	18	7
Furniture industry	48	40	25	44	2	3	1	3
Iron and steel workers	72	56	72	67	.....	.....	2	8
Leather workers	34	19	15	27	.....	.....	1	5
Lumber industry	44	295	75	39	.....	4	1	2
Meat cutting	70	38	39	67	.....	2	.....	2
Metal trades	547	513	439	527	14	31	23	29
Mining	402	418	184	170	3	2	5	2
Paper manufacturing	51	39	35	41	2	1	.....	3
Printing and publishing	25	40	39	58	4	3	4	3
Shipbuilding	27	103	136	101	.....	.....	3	1
Stonework	59	26	14	13	2	.....	.....	.....
Textile industry	258	242	209	258	3	5	3	9
Tobacco	61	45	47	54	2	2	2	2
Transportation	224	342	226	231	4	1	1	3

TABLE 8.—OCCUPATIONS IN WHICH THE LARGEST NUMBER OF STRIKES AND LOCKOUTS OCCURRED IN 1916, 1917, 1918, AND 1919.

Occupation.	Strikes.				Lockouts.			
	1916	1917	1918	1919	1916	1917	1918	1919
Bakers	66	92	41	63	15	13	4	7
Boiler makers	23	43	28	29	.....	1	.....	.....
Boot and shoe workers	44	37	48	49	1	1	2	3
Brewery workers	19	22	27	20	2	.....	.....	2
Brickmakers and clay workers	22	9	5	16	1	.....	.....	1
Building laborers and hod carriers	53	72	27	48	1	2	.....	.....
Carpenters	73	98	76	84	2	3	3	4
Freight handlers	41	59	24	5	.....	.....	.....	.....
Glassworkers	40	20	13	8	.....	2	.....	.....
Hat and cap makers and fur workers	22	50	34	36	1	3	.....	.....
Inside wiremen	32	33	45	29	4	2	4	1
Longshoremen	68	61	30	37	.....	.....	.....	1
Machinists	255	198	205	195	8	13	7	16
Metal polishers	40	23	24	55	2	6	1	5
Miners, coal	370	350	156	143	3	2	5	2
Molders	145	161	109	167	3	5	6	5
Painters and paper hangers	45	41	58	75	.....	4	1	3
Plumbers and steam fitters	52	53	71	53	1	4	3	1
Rubber workers	37	17	15	13	1	.....	1	1
Sheet-metal workers	20	32	45	17	1	2	.....	.....
Street railway employees	55	118	117	105	3	1	.....	1
Structural-iron workers	23	15	19	12	1	.....	.....	1
Tailors	32	53	48	66	.....	1	1	2
Teamsters	108	164	129	88	6	6	2	.....

In 1919, in 3,149 strikes and 116 lockouts the number of establishments involved in each was stated. Only 1 establishment was involved in each case in 1,945 strikes and 88 lockouts, 2 establishments in 131 strikes and 4 lockouts, 3 in 94 strikes, 4 in 51 strikes and 3 lockouts, 5 in 48 strikes and 2 lockouts, over 5 in 880 strikes and 19 lockouts. In 1918, in 2,987 strikes and 109 lockouts, the number of establishments involved in each was stated. Only 1 establishment was involved in 2,460 strikes and 80 lockouts, 2 establishments in 66 strikes and 4 lockouts, 3 in 41 strikes and 1 lockout, 4 in 23 strikes, 5 in 90 strikes, and over 5 in 307 strikes and 24 lockouts. In 1917, in 3,643 strikes and 113 lockouts, the number of establishments involved in each was stated. In each case only 1 establishment was

involved in 2,994 strikes and 84 lockouts, 2 establishments in 140 strikes and 3 lockouts, 3 in 69 strikes and 4 lockouts, 4 in 41 strikes, 5 in 18 strikes, over 5 in 381 strikes and 22 lockouts.

Tables 9, 10, and 11 relate to those strikes and lockouts which were reported to have ended during the four years under consideration:

TABLE 9.—NUMBER OF STRIKES AND LOCKOUTS ENDING IN EACH MONTH DURING 1916, 1917, 1918, AND 1919.

Year.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Month not stated.	Total.
Strikes:														
1916	114	129	173	289	330	213	200	213	217	171	151	76	119	2,395
1917	108	92	155	191	214	168	155	153	196	175	120	128	160	2,015
1918	103	123	160	197	258	217	203	203	165	140	113	159	75	2,116
1919	116	105	113	130	214	185	190	228	216	173	139	101	51	1,961
Lockouts:														
1916	3	3	3	3	7	3	.....	4	6	2	5	2	12	53
1917	3	2	4	7	9	4	2	3	5	2	2	4	11	58
1918	2	1	6	10	3	5	6	3	5	6	4	4	9	64
1919	2	2	5	8	8	7	5	6	8	8	3	4	2	68
Total:														
1916	117	132	176	292	337	216	200	217	223	173	156	78	131	2,448
1917	111	94	159	198	223	172	157	156	201	177	122	132	171	2,073
1918	105	124	166	207	261	222	209	206	170	146	117	163	84	2,180
1919	118	107	118	138	222	192	195	234	224	181	142	105	53	2,029

TABLE 10.—RESULTS OF STRIKES AND LOCKOUTS ENDING IN 1916, 1917, 1918, AND 1919.

Result.	Strikes ending in—				Lockouts ending in—			
	1916	1917	1918	1919	1916	1917	1918	1919
In favor of employers	727	382	450	624	21	13	6	18
In favor of employees	733	614	610	533	16	17	15	16
Compromised	766	698	668	729	11	21	17	11
Employees returned pending arbitration	70	131	200	42	3	6	5	3
Not reported	99	190	188	33	2	1	21	20
Total	2,395	2,015	2,116	1,961	53	58	64	68

TABLE 11.—DURATION OF STRIKES AND LOCKOUTS ENDING IN 1916, 1917, 1918, AND 1919.

Duration.	Strikes ending in—				Lockouts ending in—				Duration.	Strikes ending in—				Lockouts ending in—			
	1916	1917	1918	1919	1916	1917	1918	1919		1916	1917	1918	1919	1916	1917	1918	1919
Less than 1 day	38	88	84	25	....	....	....	....	15 to 18 days	142	74	84	105	6	1	4	4
1 day	141	194	143	73	....	2	2	....	19 to 21 days	82	44	67	85	1	2	2	5
2 days	183	111	168	64	2	2	3	1	22 to 24 days	39	22	37	47	1	1	....	3
3 days	148	102	124	74	1	3	....	....	25 to 28 days	60	32	33	62	1	3	2	....
4 days	124	61	111	73	1	1	1	....	29 to 31 days	53	28	56	59	....	....	2	8
5 days	130	55	68	65	1	1	....	1	32 to 35 days	25	27	27	55	....	....	....	3
6 days	109	65	66	39	3	....	....	....	36 to 42 days	48	37	37	74	2	1	1	2
7 days	91	93	113	57	2	2	2	2	43 to 49 days	22	26	31	72	2	3	1	4
8 days	85	29	59	66	1	....	3	1	50 to 63 days	53	37	40	115	....	....	8	8
9 days	48	29	38	32	2	2	....	....	64 to 77 days	39	19	16	66	1	3	....	2
10 days	106	42	54	49	2	1	....	2	78 to 91 days	26	11	15	52	1	1	....	2
11 days	40	24	24	27	1	....	....	....	92 to 199 days	87	51	28	137	12	4	2	7
12 days	42	39	25	23	....	....	1	1	Over 200 days	17	9	21	18	6	....	....	3
13 days	26	13	17	29	1	....	....	....	Not reported	332	614	483	279	....	24	28	9
14 days	61	39	47	39	3	1	2	....	Total	2,395	2,015	2,116	1,961	53	58	64	68

In 1919 the total duration of these strikes was 57,885 days, and of the lockouts 2,215 days, the average duration of the former being 34 days and of the latter 38 days. In 1918 the total duration of these strikes was 28,779 days and of the lockouts 1,116 days, the average duration of the former being 18 days and of the latter 31 days. In 1917 the total duration of these strikes was 25,077 days and of the lockouts 1,904 days, the average of the former being 18 days and of the latter 56 days. In 1916 the total duration of the strikes was 46,305 days and of the lockouts 3,375 days, an average of 22 days and 64 days, respectively.

Included in the above table as "not reported" are 81 strikes and 2 lockouts in 1919, 127 strikes and 4 lockouts in 1918, and 200 strikes and 3 lockouts in 1917, designated in the reports as "short," but their exact duration not being given.

In addition, there were, in 1919, 175 strikes and 13 lockouts; in 1918, 79 strikes and 8 lockouts, and in 1917, 95 strikes and 1 lockout in which the places of the employees were filled very soon after the strike occurred, and the work became normal in a few days, but the Bureau has no record that these disturbances were ever formally settled.

In 1919 the number of unauthorized strikes of which the Bureau has information was 125, involving 1,053,256 strikers. In 1918 the number was 58 and in 1917, 72. Between April 6, 1917, the date of our entrance into the war, and November 11, 1918, the date of signing the armistice, 6,205 strikes and lockouts occurred.

The table following shows the number of strikes and lockouts in 1918 and 1919 in the leading industries and occupations, by States:

TABLE 12.—NUMBER OF STRIKES AND LOCKOUTS BEGINNING IN 1918 AND 1919, IN SPECIFIED OCCUPATIONS, BY STATES.

Strikes.

State.	Bakers.		Barbers.		Brass and brass-goods workers.		Brewery and soft-drink workers.		Brickmakers and clay workers.		Broom makers.		Building trades.			
													Bricklayers.		Carpenters.	
	1918	1919	1918	1919	1918	1919	1918	1919	1918	1919	1918	1919	1918	1919	1918	1919
Alabama	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	1
Arizona	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....
Arkansas	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1
California	2	6	3	....	....	....	1	2	....	1	....	1	....	....	3	2
Colorado	....	....	1	....	....	....	1	....	....	....	....	....	2	....	1	2
Connecticut	....	....	....	2	....	3	....	1	....	....	....	....	....	1	5	1
Delaware	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	1
District of Columbia	1	....	....	....	....	....	1	....	....	....	....	....	....	....	2	....
Florida	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	1
Georgia	....	....	1	....	....	....	....	....	....	....	....	....	....	....	1	3
Illinois	2	6	1	1	1	1	3	2	....	1	....	2	1	....	6	3
Indiana	....	2	....	1	....	1	1	3	....	1	....	....	1	....	....	3
Iowa	....	6	1	....	....	....	....	....	....	1	....	....	1	....	2	1
Kansas	....	....	....	....	....	....	....	2	....	....	....	....	....	....	....	....
Kentucky	....	2	....	....	....	....	1	....	....	....	....	....	....	....	....	....
Louisiana	1	....	....	....	....	....	....	....	....	....	....	1	....	....	1	1
Maine	1	....	....	....	....	1	....	....	....	....	....	....	....	1	....	3
Maryland	....	1	....	1	....	....	....	....	2	....	....	....	1	....	....	3
Massachusetts	5	2	....	....	1	1	5	1	....	....	....	....	1	1	10	11
Michigan	1	....	....	....	....	1	1	....	....	....	....	....	....	....	1	3
Minnesota	....	1	....	....	....	....	1	....	....	....	....	....	....	2	1	1
Mississippi	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....
Missouri	1	2	....	....	1	2	1	....	....	....	....	....	1	....	2	....
Montana	....	1	1	....	....	....	....	....	....	....	....	....	....	....	....	....
Nebraska	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....
New Hampshire	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	4
New Jersey	4	6	....	1	....	....	....	....	....	....	....	....	....	....	5	7
New York	12	5	7	8	....	3	3	4	....	4	1	1	1	....	9	10
North Carolina	....	....	....	....	....	....	....	....	....	....	....	....	....	....	5	....
North Dakota	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....
Ohio	3	3	1	....	....	2	1	1	2	2	....	....	1	2	4	3
Oregon	....	1	....	....	....	....	....	....	....	....	....	1	....	....	....	....
Pennsylvania	3	3	2	1	1	....	3	....	....	4	....	1	1	....	6	6
Porto Rico	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Rhode Island	....	2	....	....	....	....	1	1	....	....	....	....	1	1	1	2
South Dakota	....	2	....	....	....	....	....	....	....	....	....	....	1	....	....	1
Tennessee	1	....	....	....	....	....	1	....	....	....	....	....	....	....	1	3
Texas	2	1	1	....	....	....	....	3	....	....	....	....	....	1	3	2
Utah	....	3	....	....	....	....	....	....	....	....	....	....	....	....	1	1
Vermont	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Virginia	....	2	....	....	....	....	....	....	....	....	....	....	....	1	2	....
Washington	....	5	1	2	....	....	1	....	1	....	....	....	....	....	....	1
West Virginia	....	....	....	....	....	....	....	....	....	....	....	....	....	1	1	....
Wisconsin	1	....	2	....	....	....	....	....	....	....	....	1	....	....	1	3
Total	41	63	24	18	4	15	27	20	5	15	1	8	13	12	76	84

Lockouts.

Connecticut	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Indiana	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1
Iowa	....	1	....	....	....	....	....	....	....	1	....	....	....	....	....	....
Kansas	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Maine	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Maryland	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Massachusetts	2	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Montana	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1
New York	1	2	....	....	....	....	....	1	....	....	....	....	1	....	1	....
North Carolina	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	1
Ohio	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Rhode Island	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Tennessee	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	1
Texas	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....
Total	4	7	....	....	....	....	....	2	....	1	....	....	1	....	3	4

TABLE 12.—NUMBER OF STRIKES AND LOCKOUTS BEGINNING IN 1918 AND 1919, IN SPECIFIED OCCUPATIONS, BY STATES—Continued.

Strikes.

State.	Building trades—Continued.															
	Cement workers.		Inside wiremen.		Lathers.		Laborers and hod carriers.		Painters and paper hangers.		Plasterers.		Plumbers and steam fitters.		Roofers.	
	1918	1919	1918	1919	1918	1919	1918	1919	1918	1919	1918	1919	1918	1919	1918	1919
Alabama	....	....	2	1	....	....	....	....	....	....	....	....	....	1	....	....
Arkansas	....	....	....	....	....	....	....	....	....	....	....	....	1	1	....	....
California	1	....	2	2	....	....	....	....	1	2	....	....	1	2	1	....
Colorado	....	....	....	....	....	....	....	1	2	4	....	....	....	1	....	....
Connecticut	....	....	....	....	....	1	1	1	6	1	....	....	5	1	....	....
Delaware	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....
District of Columbia	....	....	....	....	....	....	....	....	1	....	1	1	1	....	....	....
Florida	....	....	....	1	....	....	....	....	1	1	....	....	....	....	....	....
Georgia	....	....	1	1	....	....	1	....	1	1	....	....	1	....	....	....
Idaho	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....
Illinois	....	....	4	1	....	....	2	2	6	3	....	....	5	4	....	1
Indiana	1	....	6	2	....	....	....	3	2	1	....	1	4	3	....	....
Iowa	1	....	3	....	....	....	3	1	....	2	2	....	2	2	....	....
Kansas	....	....	....	....	....	....	1	....	....	1	....	....	2	....	....	....
Kentucky	....	....	....	....	....	....	....	....	....	....	....	....	....	2	....	....
Louisiana	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....
Maine	....	....	....	....	....	....	....	....	2	3	....	....	1	....	....	....
Maryland	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....
Massachusetts	....	....	3	1	....	1	7	12	7	8	....	2	6	7	1	....
Michigan	....	....	2	2	....	....	....	2	3	2	....	....	3	1	....	....
Minnesota	....	1	1	....	....	....	1	1	1	3	....	1	....	....	....	....
Mississippi	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....
Missouri	....	....	1	2	....	....	1	2	1	1	1	1	1	1	....	1
Montana	....	....	2	....	....	....	1	1	1	1	1	1	1	....	....	....
Nebraska	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....
New Hampshire	....	1	....	....	....	....	....	....	1	2	....	1	....	1	....	....
New Jersey	....	....	2	1	....	....	1	1	1	8	....	....	2	3	....	....
New York	1	....	1	1	....	....	4	4	3	6	....	3	14	6	....	....
North Carolina	....	....	....	....	....	....	....	....	....	2	....	....	....	....	....	....
Ohio	....	....	2	2	....	2	1	3	7	6	1	....	6	5	1	....
Oklahoma	....	....	....	1	....	....	....	....	....	....	....	....	1	....	....	....
Oregon	....	1	....	....	....	....	1	....	1	....	....	....	....	....	....	....
Pennsylvania	1	....	3	2	....	....	....	1	3	4	....	....	4	3	....	....
Rhode Island	....	....	....	1	....	....	1	3	1	1	1	....	1	4	....	....
Tennessee	....	....	....	1	....	....	....	1	....	1	....	....	1	1	....	....
Texas	....	....	2	3	....	....	....	....	3	2	....	....	1	....	....	....
Utah	....	....	....	....	....	....	....	1	1	....	....	....	....	....	....	....
Vermont	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....
Virginia	....	....	1	1	1	....	....	1	1	....	1	....	2	1	....	....
Washington	1	....	....	....	....	....	....	2	....	4	....	....	....	....	....	....
West Virginia	....	....	1	1	....	....	1	....	....	....	....	....	2	....	....	....
Wisconsin	....	....	5	2	....	....	....	1	1	4	....	....	1	2	....	....
Wyoming	....	....	1	....	....	....	....	2	....	....	....	....	....	....	....	....
Total	6	3	45	29	1	4	27	48	58	75	8	12	71	53	3	2

Lockouts.

California	....	....	....	1	....	....	....	....	....	1	....	....	....	....	....	....
Connecticut	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....
Illinois	....	....	2	....	....	....	....	....	....	....	....	....	....	....	....	....
Indiana	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....
Missouri	....	....	....	....	....	....	....	....	....	....	....	1	1	....	....	....
Ohio	....	....	....	....	....	....	....	....	....	....	1	....	....	1	....	....
Tennessee	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....
Texas	....	....	1	....	....	....	....	....	....	....	....	....	1	....	....	....
Utah	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....
Washington	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....
Total	....	....	4	1	....	....	....	....	1	3	1	1	3	1	....	....

TABLE 12.—NUMBER OF STRIKES AND LOCKOUTS BEGINNING IN 1918 AND 1919, IN SPECIFIED OCCUPATIONS, BY STATES—Continued.

Strikes.

State.	Building trades—Concluded.						Carriage, automobile, and wagon workers.		Chemical workers.		Clerks (retail).		Coopers.		Electrical and gas supply workers.	
	Sheet-metal workers.		Structural-iron workers.		General and miscellaneous.											
	1918	1919	1918	1919	1918	1919	1918	1919	1918	1919	1918	1919	1918	1919	1918	1919
Alabama	1								1		1					
Alaska					1							1				
Arkansas																
California	3					4			4				1			
Colorado					1	1				1	2					
Connecticut					3	1			1						1	
Delaware	1				2											
District of Columbia		1														
Florida						2										
Georgia	1	1			1				1	1		1				
Idaho					1											1
Illinois	5	3	3		3	3	1	1	3	2	4	10	1	2		3
Indiana	1			2	1	3				2						1
Iowa	2					2		1								
Kansas						1	1	2	1	1	1	1				
Kentucky	1				1							2				1
Louisiana			1	2	2				1							
Maine											1					
Maryland		1	2		1	1										
Massachusetts					4	6	1	3			2	5			7	2
Michigan						3	2	6		1	3	1				
Minnesota					1	2		2		2				1		
Mississippi							1									
Missouri	1			2	2	1	4	1	4	2	5	2				1
Montana					2	1					1					
Nebraska					2							1				
New Hampshire												1				
New Jersey	1	1		1	3	3		1	3	6			2		1	
New York	11	3	8		4	9	1	6	2	8	9	17	3	1	4	1
North Carolina	1										1					
Ohio	1	2	3	1	3	6	1	5			2	2	1	5		1
Oklahoma	1				2	1					1	1				
Oregon						2										
Pennsylvania	1	3	1	1	2	9	1	1	1	3	1			1		1
Porto Rico																
Rhode Island									3	1		1			1	
South Carolina	1					1									1	
Tennessee	4	1		1	1			1	1	1					1	
Texas		1		1		4			3	2						
Utah	1					1										
Virginia	1															
Washington					1	2										
West Virginia	1		1	1		1										1
Wisconsin	2					3		1						1		
Total	45	17	19	12	44	73	13	31	29	33	34	46	8	11	16	13

Lockouts.

California										1						
Illinois								1								
Indiana				1	1	1										
Louisiana						1										
Missouri					1											
Montana					1											
New Jersey						1										
New York					1	1										
Ohio						1										
Texas						1										
Virginia						1										
West Virginia						1										
Wisconsin								1								
Total				1	4	8		2		1						

TABLE 12.—NUMBER OF STRIKES AND LOCKOUTS BEGINNING IN 1918 AND 1919, IN SPECIFIED OCCUPATIONS, BY STATES—Continued.

Strikes.

State.	Clothing industries.																	
	Boot and shoe workers.		Fur workers and hat and cap makers.		Milliners.		Shirt makers.		Cloak, waist, and skirt makers.		Ladies' clothing makers.		Men's clothing makers.		Tailors.		Miscellaneous.	
	1918	1919	1918	1919	1918	1919	1918	1919	1918	1919	1918	1919	1918	1919	1918	1919	1918	1919
Arizona	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....
California	....	....	....	1	....	....	....	....	1	....	....	1	1	1	1	5	....	....
Colorado	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....
Connecticut	2	....	2	4	....	....	....	....	....	5	1	3	2	2	....	4	....	2
District of Columbia	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	2	....	....
Florida	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2	....	....
Georgia	....	....	....	....	....	....	....	....	....	....	....	....	....	....	3	2	....	....
Idaho	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....
Illinois	....	1	3	1	....	1	....	....	1	4	....	1	7	5	5	5	....	1
Indiana	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	1	....
Iowa	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	1
Kentucky	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	1	....	....
Maine	3	4	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....
Maryland	....	1	....	....	....	....	1	1	2	....	....	1	4	2	....	1	....	....
Massachusetts	34	22	....	4	....	1	....	....	2	5	....	5	9	3	7	9	....	4
Michigan	....	....	....	1	....	....	....	1	....	....	....	....	....	....	1	1	....	1
Minnesota	....	....	2	....	....	1	1	....	....	....	....	....	....	1	1	1	....	....
Missouri	....	....	....	1	....	....	1	1	....	....	....	....	4	2	1	3	....	....
Nebraska	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	1	....
New Hampshire	1	2	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
New Jersey	....	1	6	3	....	1	1	1	....	2	....	2	4	2	4	2	1	1
New York	7	14	18	13	2	7	10	1	129	20	16	12	50	12	14	6	5	13
Ohio	....	....	....	3	....	....	....	....	3	2	....	2	3	3	6	5	1	1
Oklahoma	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1
Oregon	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....
Pennsylvania	....	1	2	4	2	....	2	3	1	....	....	....	14	5	2	2	1	....
Rhode Island	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2	....	....
South Carolina	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....
Texas	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....
Utah	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....
Vermont	....	....	....	....	....	....	....	....	....	....	....	1	....	1	....	....	....	....
Virginia	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2	....	....
Washington	....	2	....	....	....	....	....	....	....	....	....	....	....	....	1	2	....	....
Wisconsin	....	1	1	....	....	....	....	....	....	....	....	....	....	....	....	2	....	....
Total	48	49	34	36	4	11	16	8	139	38	17	28	99	40	48	66	11	25

Lockouts.

District of Columbia	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....
Georgia	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	1	....
Illinois	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....
Indiana	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....
Massachusetts	....	2	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....
New York	1	....	....	....	....	....	....	....	....	1	1	....	5	....	1	....	1	....
Pennsylvania	....	....	....	....	....	....	....	1	....	....	....	....	1	....	....	....	3	....
Tennessee	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Total	2	3	....	....	....	....	....	1	....	1	1	....	8	....	1	2	6	....

TABLE 12.—NUMBER OF STRIKES AND LOCKOUTS BEGINNING IN 1918 AND 1919, IN SPECIFIED OCCUPATIONS, BY STATES—Continued.

Strikes.

State.	Freight handling and teaming.						Furniture industry.							
	Freight handlers.		Longshoremen.		Teamsters.		Cabinetmakers and carvers.		Upholsterers.		Musical instruments.		Occupation not specified.	
	1918	1919	1918	1919	1918	1919	1918	1919	1918	1919	1918	1919	1918	1919
Alabama	....	....	1	....	....	....	....	....	....	....	....	....	....	....
Arizona	....	....	....	....	....	....	....	....	....	....	....	....	....	1
California	1	....	....	4	2	2	....	....	....	3	....	....	....	1
Canal Zone	....	....	....	1	....	....	....	....	....	....	....	....	....	....
Colorado	....	....	....	....	2	....	....	....	....	....	....	....	....	....
Connecticut	2	....	1	....	1	1	....	....	....	....	....	1	....	1
Florida	....	....	2	1	....	....	....	....	....	....	....	....	....	....
Georgia	....	1	1	1	1	1	....	....	....	....	....	....	....	....
Illinois	....	....	....	....	22	9	1	2	....	3	....	4	2	1
Indiana	....	....	....	....	3	....	....	....	....	....	....	....	1	....
Iowa	....	....	....	....	3	4	....	....	....	....	....	2	....	1
Kansas	....	....	....	....	4	1	....	....	....	1	....	....	1	....
Kentucky	....	....	....	....	1	1	....	....	....	....	....	....	....	....
Louisiana	....	....	2	3	....	....	....	....	....	....	....	....	....	....
Maine	1	....	....	....	....	....	....	....	....	....	....	....	....	....
Maryland	....	....	2	....	....	....	....	....	....	....	....	....	....	....
Massachusetts	6	2	3	5	12	17	....	....	1	....	....	....	....	2
Michigan	1	....	....	....	1	5	....	....	....	....	....	....	....	....
Minnesota	....	....	2	3	4	2	1	1	....	....	....	....	....	1
Missouri	....	....	....	....	4	2	4	....	....	....	....	1	....	1
Montana	....	....	....	....	5	....	....	....	....	....	....	....	....	....
Nebraska	....	....	....	....	2	1	....	....	....	....	....	....	....	....
New Hampshire	....	....	....	....	....	1	....	....	....	....	....	....	....	....
New Jersey	1	....	1	2	4	3	....	....	....	....	....	1	1	3
New York	8	2	7	4	28	17	4	....	....	2	....	4	3	4
Ohio	2	....	....	1	7	4	2	....	....	....	....	....	....	....
Oklahoma	....	....	....	....	1	....	....	....	....	....	....	....	....	....
Oregon	1	....	2	1	....	1	....	....	....	....	....	....	....	....
Pennsylvania	1	....	....	1	3	6	1	....	....	1	....	....	....	1
Porto Rico	....	....	1	....	....	....	....	....	....	....	....	....	....	....
Rhode Island	....	....	....	....	1	....	....	....	....	....	....	....	....	....
Tennessee	....	....	....	....	1	1	1	....	....	....	....	....	....	1
Texas	....	....	....	2	....	....	....	....	....	....	....	....	....	....
Utah	....	....	....	....	....	1	....	....	....	....	....	....	....	....
Virginia	....	....	1	2	3	....	....	....	....	....	....	....	....	....
Washington	....	....	3	3	9	4	....	....	1	....	....	....	1	....
West Virginia	....	....	....	....	2	....	....	....	....	....	....	....	....	....
Wisconsin	....	....	1	3	3	3	....	....	....	....	....	....	....	....
Interstate	....	....	....	....	....	1	....	....	....	....	....	....	....	....
Total	24	5	30	37	129	88	14	3	2	10	....	13	9	18

Lockouts.

California	....	....	....	1	....	....	....	....	1	....	....	....	....	....
Illinois	....	....	....	....	....	....	....	....	....	....	....	....	....	....
New York	....	....	....	....	....	....	....	....	....	....	....	....	....	....
North Carolina	....	....	....	....	....	....	....	....	....	....	....	....	....	1
Ohio	....	....	....	....	1	....	....	....	....	....	....	....	....	....
Pennsylvania	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Tennessee	....	....	....	....	....	....	....	....	....	....	....	....	....	2
Texas	....	....	....	....	1	....	....	....	....	....	....	....	....	....
Total	....	....	....	1	2	....	....	....	1	....	....	....	....	3

TABLE 12.—NUMBER OF STRIKES AND LOCKOUTS BEGINNING IN 1918 AND 1919, IN SPECIFIED OCCUPATIONS, BY STATES—Continued.

Strikes.

State.	Fire-fighters.		Fisher-men.		Food han-dlers.		Glass-workers.		Hard-ware workers.		Iron and steel workers.		Jewelry workers.		Laun-dry workers.	
	1918	1919	1918	1919	1918	1919	1918	1919	1918	1919	1918	1919	1918	1919	1918	1919
Alabama	1	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....
Arizona	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....
Arkansas	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	1
California	....	....	1	....	11	5	1	....	1	....	8	....	....	1	1	1
Colorado	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....
Connecticut	1	....	....	....	....	....	....	....	3	1	3	2	1	1	....	....
Delaware	....	....	....	....	....	....	....	....	....	....	2	....	....	....	....	....
District of Columbia	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1
Florida	....	1	....	1	....	....	....	....	....	....	....	....	....	....	....	....
Georgia	....	....	....	....	....	....	....	2	....	....	....	1	....	....	....	....
Illinois	2	1	....	....	3	....	....	....	1	4	6	9	....	1	1	....
Indiana	1	....	....	....	1	1	1	....	....	....	1	1	....	....	....	1
Iowa	....	....	....	....	1	....	....	....	1	1	....	2	....	....	....	1
Kansas	....	....	....	....	1	1	....	....	....	....	....	....	....	1	1	....
Kentucky	....	....	....	....	....	....	....	....	....	....	1	2	....	....	....	....
Louisiana	....	....	....	....	....	3	....	....	....	....	....	....	....	....	....	....
Maine	....	....	....	2	....	2	....	....	....	....	....	....	....	....	....	....
Massachusetts	2	....	....	3	2	2	3	....	1	....	2	6	4	3	....	5
Michigan	....	1	....	....	....	....	....	....	1	....	....	....	....	....	....	....
Minnesota	....	....	....	....	....	1	....	....	1	....	1	....	....	....	....	....
Missouri	....	....	....	....	1	....	....	....	1	....	4	....	....	....	1	....
Montana	....	....	....	....	1	....	....	....	....	....	....	....	....	....	1	....
New Jersey	....	....	....	1	....	....	1	....	1	3	7	3	2	3	1	2
New York	....	....	....	2	1	4	1	....	....	5	7	6	3	7	5	4
Ohio	1	3	....	1	1	....	2	4	....	2	7	11	....	2	....	1
Oklahoma	....	2	....	....	....	....	....	....	....	....	....	....	....	....	....	1
Oregon	....	....	....	1	....	2	....	....	....	....	....	....	....	1	....	1
Pennsylvania	1	....	....	1	1	1	3	....	5	1	12	16	....	1	....	1
Porto Rico	....	....	....	....	1	....	....	....	....	....	....	....	....	....	1	....
Rhode Island	....	....	....	....	....	....	....	1	....	....	....	2	....	....	....	1
Tennessee	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	1
Texas	1	....	....	....	1	....	....	....	....	....	....	....	....	....	....	3
Utah	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....
Vermont	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Washington	....	1	....	....	3	1	....	....	....	....	6	....	1	....	....	1
West Virginia	....	....	....	....	....	....	1	1	....	....	4	2	....	....	....	....
Wisconsin	....	....	....	....	....	....	....	....	....	....	1	2	....	....	....	....
Interstate	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....
Total	10	10	1	12	30	23	13	8	15	17	72	67	11	22	14	26

Lockouts.

Colorado	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Illinois	....	....	....	....	....	....	....	....	....	....	....	2	....	....	....	....
Indiana	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....
New Jersey	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....
New York	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....
Ohio	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....
Pennsylvania	....	....	....	....	....	....	....	....	....	....	2	4	....	....	....	....
Tennessee	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1
Texas	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....
Total	1	....	....	....	....	1	....	....	....	1	2	8	1	....	....	1

TABLE 12.—NUMBER OF STRIKES AND LOCKOUTS BEGINNING IN 1918 AND 1919, IN SPECIFIED OCCUPATIONS, BY STATES—Continued.

Strikes.

State.	Metal trades.															
	Blacksmiths.		Boiler makers.		Machinists.		Metal polishers.		Molders.		Pattern makers.		Stove mounters.		Occupation not specified.	
	1918	1919	1918	1919	1918	1919	1918	1919	1918	1919	1918	1919	1918	1919	1918	1919
Alabama						1				4						
Arizona						1										
California	1				2	4	1		2	2					2	
Colorado						1				2					2	
Connecticut		1			11	19		6	2	8						2
District of Columbia					1											
Florida	1	1		1												
Georgia	1				1	1			2	1					3	
Illinois		1	1	3	19	22	2	8	9	20	2	1				8
Indiana	3	2	1	1	7	6	2	4	8	8		2	3			2
Iowa			1	2	2	2			5	2						
Kansas			3						1	1					1	
Kentucky				1				1	1	4						
Louisiana						1				1						
Maine					4	1			2	1					1	
Maryland	1		1	1	3					1					1	
Massachusetts	1	1		1	22	24	4		11	20	2	3				5
Michigan	1				6	4	1	6	5	8	1	1	1		1	4
Minnesota		1		1		2			1	4						
Missouri	3		2		8	3		3	2	2	1				1	2
Montana		1				2				2					2	
Nebraska				2						1						
New Hampshire					1	2										
New Jersey	2		2	2	14	15	1	2	2	7			1			1
New York	1		2	1	30	32	7	13	19	20			2	2	7	7
North Carolina					1	1			2							
Ohio	2	8	2	2	25	16	3	8	17	19	5	1	3	1		1
Oklahoma																2
Oregon		1	1													1
Pennsylvania		3	9	7	24	11	3	1	10	13	2		2		5	5
Rhode Island	1				1	5			1							
South Carolina										1						
Tennessee		1				1			1							1
Texas	1		1	3	1	2										1
Utah					1					1						2
Vermont					2	2			1							
Virginia	1				1	1				2						
Washington	1		1		1	1		2	3							
West Virginia	1	1			6	2			1	2						2
Wisconsin					11	10		1	1	10						3
Wyoming			1													
Interstate				1												
Total	22	22	28	29	205	195	24	55	109	167	13	8	12	3	26	49

Lockouts.

Alabama										1						
Alaska															1	
California															1	
Connecticut					1	2										
Georgia						1										
Illinois					1	4										
Indiana		1			2	1		1	1	1						
Iowa						3			2	1						
Kentucky															1	
Massachusetts								1								
Minnesota						1										
Missouri					1										1	
New York						1		1	1						3	
North Carolina										1						
Ohio	1				1		1	1	1	1						
Pennsylvania						2										
Tennessee	1				1											
Virginia																1
West Virginia						1										
Wisconsin								1	1							1
Total	2	1			7	16	1	5	6	5					7	2

TABLE 12.—NUMBER OF STRIKES AND LOCKOUTS BEGINNING IN 1918 AND 1919, IN SPECIFIED OCCUPATIONS, BY STATES—Continued.

Strikes.

State.	Leather workers.		Light, heat, and power (gas and electric).		Lumber and timber workers.		Meat cutters and butchers.		Miners.				Musicians and theatrical employees.		Paper and paper goods makers.	
									Coal.		Ore.					
	1918	1919	1918	1919	1918	1919	1918	1919	1918	1919	1918	1919	1918	1919	1918	1919
Alabama	....	....	....	1	....	....	....	....	....	1	3	....	....	....	....	....
Alaska	....	....	....	....	....	1	....	....	....	....	2	1	....	....	....	....
Arizona	....	....	....	1	....	....	....	....	....	....	1	2	....	....	....	....
Arkansas	....	....	....	....	1	....	....	....	3	1	3	1	....	....	....	....
California	1	1	....	1	2	1	4	....	....	1	....	1	3	1	1	....
Colorado	....	....	2	....	....	....	1	2	4	2	1	2	....	....	....	....
Connecticut	....	....	....	....	....	....	1	5	....	....	....	....	....	....	2	....
Delaware	1	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....
District of Columbia	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....
Florida	....	....	....	....	....	....	....	....	....	....	....	2	....	....	....	....
Georgia	....	....	....	....	....	....	....	1	1	....	....	....	....	1	....	....
Idaho	....	....	....	....	6	2	....	....	....	....	3	3	....	....	....	....
Illinois	1	....	....	3	1	....	13	6	11	14	1	1	....	2	....	2
Indiana	....	1	....	4	1	....	....	6	9	6	....	....	....	1	2	....
Iowa	....	1	....	....	....	....	1	4	....	....	....	....	....	....	....	....
Kansas	....	....	....	....	....	....	2	1	9	28	1	....	1	....	....	....
Louisiana	....	....	....	....	....	2	....	2	....	....	....	....	....	....	....	....
Maine	....	....	....	....	1	2	....	....	....	....	....	....	....	....	5	2
Maryland	1	....	1	....	1	....	....	1	1	1	....	....	1	....	....	1
Massachusetts	4	9	....	5	....	....	....	5	....	....	....	....	....	1	8	2
Michigan	....	1	1	1	....	....	....	1	4	3	....	....	....	....	....	2
Minnesota	1	....	....	1	2	....	2	3	....	....	....	....	....	....	....	1
Mississippi	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....
Missouri	1	1	1	2	....	....	....	1	....	3	1	2	....	....	1	....
Montana	....	....	....	....	1	3	....	....	1	....	1	3	....	....	....	....
Nebraska	....	....	1	....	....	....	1	3	....	....	....	....	....	....	....	....
Nevada	....	....	....	....	....	....	....	....	....	....	5	4	....	....	....	....
New Hampshire	....	....	2	....	....	1	....	1	....	....	....	....	....	....	1	....
New Jersey	....	2	3	3	....	....	1	6	....	....	....	....	1	....	1	1
New Mexico	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....
New York	1	5	1	6	1	2	3	8	....	....	1	....	1	5	6	15
North Carolina	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....
Ohio	....	1	....	1	....	2	....	2	8	10	....	....	2	2	....	1
Oklahoma	....	....	....	....	....	1	....	....	5	2	1	....	2	....	....	....
Oregon	....	....	....	1	3	3	....	1	....	....	....	....	....	....	2	....
Pennsylvania	2	1	2	....	....	....	1	2	75	45	....	....	....	1	1	4
Rhode Island	....	....	....	3	....	....	....	....	....	....	....	....	....	....	....	....
South Carolina	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....
South Dakota	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....
Tennessee	....	1	....	....	....	2	....	....	2	1	....	1	....	....	1	....
Texas	....	1	2	2	....	2	4	1	1	1	....	....	....	....	....	1
Utah	....	....	....	1	....	....	....	....	....	....	2	4	....	....	....	....
Vermont	....	....	....	....	....	....	....	....	....	....	....	....	....	....	3	....
Washington	1	....	3	3	54	10	2	1	2	1	1	....	....	1	....	....
West Virginia	....	....	....	....	....	2	....	....	19	21	....	....	1	....	....	3
Wisconsin	1	1	....	1	....	1	2	3	....	....	....	....	....	....	1	5
Wyoming	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....
Interstate	....	....	....	....	1	1	....	1	....	2	....	....	....	....	....	1
Total	15	27	19	42	75	39	39	67	156	143	28	27	12	16	35	41

Lockouts.

California	....	....	....	....	....	....	....	1	....	....	....	....	....	1	....	....
Colorado	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	1
Illinois	....	....	....	....	....	....	....	1	....	....	....	....	1	....	....	....
Indiana	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....
Iowa	....	....	....	....	....	1	....	....	1	....	....	....	....	....	....	....
Kansas	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....
Louisiana	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....
Maine	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Missouri	1	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....
Montana	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Ohio	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....
Oklahoma	....	....	....	1	....	....	....	....	....	....	....	....	1	....	....	....
Utah	....	....	....	....	....	....	....	....	1	1	....	....	....	....	....	....
Virginia	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....
West Virginia	....	....	....	....	....	....	....	....	1	1	....	....	....	....	....	....
Wisconsin	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	2
Total	1	....	....	3	1	2	....	2	5	2	....	....	2	2	....	3

TABLE 12.—NUMBER OF STRIKES AND LOCKOUTS BEGINNING IN 1918 AND 1919, IN SPECIFIED OCCUPATIONS, BY STATES—Continued.

Strikes.

State.	Potters.		Printing and publishing.		Railroad employees.										Rubber workers.	
					Clerks.		Section hands and yardmen.		Shopmen.		Trainmen.		Miscellaneous.			
	1918	1919	1918	1919	1918	1919	1918	1919	1918	1919	1918	1919	1918	1919	1918	1919
Arizona														1		
Arkansas									1							
California			2	1			1	2			1		1			
Colorado			1	3						1	2					1
Connecticut				4											3	3
Florida				1						3	1					
Georgia				1		1			2	1			1			
Illinois		1	2	5			6	1	6	1	2		2	1		2
Indiana			1							3						
Iowa				1												1
Kansas								1	1							
Kentucky			3	3	1				1							
Louisiana									1	1		1				
Maine				1												
Maryland							1		2	1	1	1		1		
Massachusetts			3	5			1		2	1	1				1	1
Michigan				1					1	1	1			2		
Minnesota			2	1						1						
Missouri			2	3				1	1	1	2			1		
Montana				2			1		1							
Nebraska				1					1	1						
Nevada									1							
New Hampshire			1													
New Jersey	1			1			1			1					1	3
New York	1		12	9				2	2	2						
Ohio	1	1	5	1						1				1	4	
Oklahoma				1		1				1				1		
Oregon			1		1							1				
Pennsylvania			3				4		3	3	1	1	1	2		
Porto Rico														1		
Rhode Island				1										1	6	
Tennessee				2				1		1		1				
Texas				1		1				1						
Utah			1	1												
Virginia				1	2				3	3		1	1			
Washington				7						1			4	1		
West Virginia										1		1				
Wisconsin							2									2
Interstate								1		1		1				
Total	3	2	39	58	4	3	17	9	29	32	12	8	10	13	15	13

Lockouts.

Colorado			1													
Illinois															1	
New York			1													
Ohio		1														
Oklahoma			1													
Pennsylvania			1	2												
Utah				1												
Wisconsin																1
Total		1	4	3											1	1

TABLE 12.—NUMBER OF STRIKES AND LOCKOUTS BEGINNING IN 1918 AND 1919, IN SPECIFIED OCCUPATIONS, BY STATES—Continued.

Strikes.

State.	Ship-builders.		Stationary engineers and firemen.		Steamboat men.		Stone-workers.		Street and sewer employees.		Street railway employees.		Telegraph and telephone employees.		Tobacco workers.	
	1918	1919	1918	1919	1918	1919	1918	1919	1918	1919	1918	1919	1918	1919	1918	1919
Alabama	1	2	....	....	....	....	....	....	....	2	1	....	....	1	....	....
Arkansas	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
California	10	12	1	....	1	3	....	....	....	....	....	3	....	3	....	2
Colorado	....	....	....	1	....	....	....	....	....	....	....	1	....	1	1	1
Connecticut	3	2	....	....	....	....	....	....	1	2	4	1	....	1	1	5
Delaware	3	1	....	....	....	....	....	....	1	....	1	....	....	....	....	....
District of Columbia	....	....	....	....	....	....	....	....	2	....	....	....	....	....	1	....
Florida	2	3	....	....	....	....	....	....	....	....	3	....	....	2	7	4
Georgia	3	3	....	1	....	1	....	....	....	....	4	2	....	2	....	....
Illinois	1	1	1	1	1	....	....	....	1	2	14	12	4	5	6	4
Indiana	....	....	....	....	....	....	....	....	....	....	1	2	1	6	....	2
Iowa	....	....	....	....	....	....	....	....	....	....	3	6	1	....	....	....
Kansas	....	....	1	....	....	....	....	....	....	....	3	1	1	....	....	....
Kentucky	....	....	....	....	....	....	....	....	....	1	1	1	....	1	3	....
Louisiana	2	1	....	....	1	3	....	....	....	2	1	....	....	1	....	....
Maine	7	3	1	....	....	1	....	....	....	1	....	....	....	1	....	....
Maryland	15	4	1	....	2	1	1	....	6	....	2	....	....	1	....	1
Massachusetts	6	4	9	6	....	2	5	3	10	12	6	12	....	2	1	1
Michigan	2	3	....	....	1	....	1	....	....	....	3	4	2	1	1	....
Minnesota	1	....	1	1	1	1	....	....	....	....	1	....	1	....	....	....
Mississippi	1	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Missouri	....	1	1	....	....	....	....	....	1	....	9	1	4	1	2	1
Montana	....	....	....	....	....	....	....	....	2	....	2	....	1	....	....	....
Nebraska	....	....	....	3	....	....	....	....	1	....	....	....	....	1	....	....
New Hampshire	....	....	....	....	....	....	2	1	2	1	1	....	....	....	....	1
New Jersey	9	11	1	2	1	....	....	....	....	1	3	2	....	....	1	8
New Mexico	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....
New York	13	9	2	2	10	13	1	....	5	3	16	14	4	3	13	6
North Carolina	....	2	....	1	....	....	1	....	....	....	....	....	....	....	1	....
North Dakota	....	....	....	....	....	....	....	....	....	....	1	....	1	....	....	....
Ohio	1	2	4	1	1	....	1	2	....	....	13	14	4	6	2	3
Oklahoma	....	....	....	....	....	....	....	....	....	....	....	7	1	2	....	....
Oregon	3	4	....	....	....	1	....	....	1	....	....	....	....	....	....	....
Pennsylvania	24	14	2	....	2	4	....	1	1	2	7	10	2	4	3	10
Porto Rico	....	....	....	....	....	....	....	....	....	....	1	....	....	....	1	2
Rhode Island	2	....	....	....	....	1	....	....	2	1	....	1	....	....	....	....
South Dakota	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....
Tennessee	....	....	1	....	....	....	....	1	1	....	3	2	1	....	1	1
Texas	3	....	....	....	....	....	....	2	....	1	3	2	2	....	....	....
Utah	....	....	....	....	....	....	....	2	....	....	1	....	....	....	....	....
Vermont	....	....	....	....	....	....	....	....	....	....	....	1	....	1	....	....
Virginia	5	2	....	....	1	1	....	....	....	....	2	....	1	2	....	....
Washington	14	13	....	....	....	....	....	....	2	....	1	....	1	2	....	....
West Virginia	....	....	....	....	....	1	....	1	....	1	1	3	....	....	2	....
Wisconsin	4	....	....	....	....	1	2	....	....	....	2	1	....	....	....	2
Wyoming	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....
Interstate	1	3	....	....	....	2	....	....	....	....	....	2	1	3	....	....
Total	136	101	26	19	22	36	14	13	39	32	117	105	33	53	47	54

Lockouts.

California	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....
Colorado	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	1
Florida	1	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....
Georgia	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....
Illinois	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....
Kentucky	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....
Massachusetts	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....
Michigan	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Mississippi	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Missouri	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1
New Jersey	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Ohio	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....
Oklahoma	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....
Oregon	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....
Washington	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....
West Virginia	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....
Total	3	1	....	1	....	1	....	....	....	....	....	1	6	1	2	2

TABLE 12.—NUMBER OF STRIKES AND LOCKOUTS BEGINNING IN 1918 AND 1919, IN SPECIFIED OCCUPATIONS, BY STATES—Concluded.

Strikes.

State.	Textile industry.										Waiters, cooks, bartenders, and hotel employees.		Miscellaneous workers.		Occupations not reported.	
	Cotton and woolen workers.		Dyers.		Hosiery and knit-goods workers.		Silk workers.		Miscellaneous and not specified.							
	1918	1919	1918	1919	1918	1919	1918	1919	1918	1919	1918	1919	1918	1919	1918	1919
Alabama													1			
California	1			1									2	4	3	
Colorado													3			
Connecticut	7	12	1		3	2		1	3	4	2	1	6	2		
Delaware											1		2			
District of Columbia											1	2		1		
Florida												1		2		
Georgia	4												1	1		
Hawaii													1			
Idaho												2				
Illinois		2		1						1	10	3	18	16		
Indiana								1					4	1		
Iowa												1	4			
Kansas											1		2			
Kentucky		1			1						1					
Louisiana													3	3		
Maine	4	3		1						2		1		2		
Maryland	2				2		1	1			2	1	5	1		
Massachusetts	48	56	6	3	1	2	3	5	15	9	6	6	18	10	2	2
Michigan			1			2					2	1	2	1	1	1
Minnesota											1	2	5	2	2	
Missouri			2								1	1	6	1		
Montana											1	1	2			
Nebraska												1	1			
New Hampshire	4	9				1				1			2			
New Jersey	5	3	2	5			15	10		5	3		8	5		1
New York	5	10	1	3	14	13	8	4	4	4	30	15	22	29	4	2
North Carolina		12														
Ohio		1									4	3	5	6	1	2
Oklahoma											2	1		3		
Oregon		1										1	1	5		
Pennsylvania	7	2	2	1	3	1	5	12	1	7	4	3	8	5	1	3
Rhode Island	3	17	3	1			4	3	16	13	1	1	1	1		2
South Carolina	1	2														
Tennessee													2	1		
Texas												3	2	2		1
Utah												1	1	1	1	
Vermont	1	1				1								2	1	
Virginia								1					3		2	
Washington				1								2	5	3		
West Virginia										1		6	4			
Wisconsin													2	2	4	
Wyoming													1			
Interstate													1			
Total	92	132	18	17	24	22	36	38	39	47	73	60	154	112	22	14

Lockouts.

Arizona											1					
Georgia	2	1								1						
Illinois													3	2		
Indiana											1		2			
Massachusetts	1									1		1				
New Hampshire		1														
New Jersey				1												
New York													2			
Oklahoma															1	
Oregon														1		
Pennsylvania										1						
Tennessee										2						
Wisconsin										1						
Total	3	2		1						6	2	1	7	3	1	

CURRENT NOTES OF INTEREST TO LABOR.

Efficiency of Labor Increasing.

The question of the present efficiency of labor was the subject of a recent investigation by the research department of the National Association of Credit Men, and the results of the answers to a questionnaire which was sent to a list of representative manufacturers were summarized in the May issue of the Credit Monthly. The questionnaire covered the following points: (1) The efficiency of labor in March, 1920, as compared with December, 1919; (2) present efficiency as compared with so-called normal times (1913–14); (3) reasons for reduced efficiency when present conditions are unsatisfactory; (4) the reasons for the increase in efficiency if present conditions show improvement.

Replies were received from 169 manufacturers located in all sections of the country, and an analysis of the answers led the author, Dr. Whyte, to conclude first that there is a good deal of exaggeration in the often repeated statement that labor in this country is only 50 or 60 per cent as efficient as it was before the war, and, second, that the year 1920 is so far showing an increase in efficiency.

In reply to the question, "Is your labor more efficient now than it was three months ago?" 57, or 34 per cent, of the 167 firms replying reported an increase in efficiency; 72, or 43 per cent, reported no improvement; and 10, or 6 per cent, reported a decrease in efficiency, while 18 companies thought that, although there was no improvement shown, labor was as efficient as in prewar times, and 10 stated that old labor showed as much efficiency as in the prewar period but that new labor was inefficient. Since more than one-third of these firms believed that conditions in this respect had improved, as against 6 per cent who reported a reduction in efficiency, altogether an increase of production for the three-month period was shown.

On the other hand, the replies to the question comparing the present with the so-called normal period show that production is not yet up to the prewar standard. Seventy per cent of the 169 companies answering this question stated that they did not believe that labor is as efficient now as it was in 1913–14. Thirteen of these employers, however, attempted to make a percentage comparison which, when averaged, showed a relative efficiency at present of 73 per cent, and while the number reporting was too small to form a general estimate it was considered that it refutes in a measure the charge that the relative degree of efficiency reaches as low a point as 50 or 60 per cent. Twenty-seven, or 16 per cent, believed that labor is as efficient now as formerly, but only 3 per cent considered that efficiency has reached a standard beyond that of normal times.

The reasons assigned for lowered production show that a large number of employers attribute it to labor shortage. The causes

next in order of importance are given as industrial unrest, high rate of labor turnover, high wages, reaction from the war, and high cost of living, while in a few instances the blame was laid upon organized labor, the high wages paid by the Federal Government during the war, lack of interest, general extravagance, shorter hours, housing shortage, radical social agencies, and prohibition.

Causes for increased efficiency were attributed to profit sharing, bonuses, high wages, industrial welfare work, improved methods of management, abatement of industrial unrest, and education of employees along economic lines.

Apprenticeship in Wisconsin.

THE Industrial Commission of Wisconsin has as one of its functions the supervision of a system of apprenticeship. This is the only State in the Union in which such a system exists, or in fact in which apprenticeship receives real attention from the State. A brief report [1] by the commission sets forth the reasons for the attempt at standardization that has been entered upon by the State, with representative standards or schedules worked out for application to certain trades. Provision is made for a variety of establishments and equipment so as to avoid difficulties due to an unnecessary rigidity. The schedules presented relate to the metal trades, covering the occupations of machinist, automobile machinist, toolmaker, boiler maker, and metal pattern maker; the building trades, including bricklayers, plasterers, and plumbers; the allied printing trades, including compositors, and lithographic transferrers; unclassified trades, including shoemakers, bakers, custom tailors, milliners, jewelry engravers, jewelers, and barbers. Thirty questions and answers intended to explain and enforce the principles involved conclude the pamphlet. On the satisfactory completion of the apprenticeship the apprentice receives a diploma issued by the State under the seal of the industrial commission and countersigned by the employer. What constitutes a satisfactory completion of the apprenticeship is determined by the commission.

A Home-Building Experiment in Manchester, England.

IN THE April, 1920, issue of The Labor Gazette, issued by the Canadian department of labor, there is a brief account of a labor enterprise of an unusual character which has been inaugurated in Manchester, England.

The housing committee of the city corporation has agreed to the proposition of the building guild, a newly formed federation of building trades, to erect 1,000 houses in Irlam, a suburb of Manchester. The municipality is to provide the funds while the guild is to furnish

[1] Apprenticeship in Wisconsin. Third report. Industrial Commission of Wisconsin [Madison], 1919, 18 pp.

not only the manual labor but also the technical and administrative workers. The city is to pay the labor cost and 10 per cent additional, and is to receive the houses when they are built. The workers are to get full week's wages even though the work is delayed because of inclement weather. The extra 10 per cent is to cover (*a*) losses ensuing from the full-week system; (*b*) purchase of plant, such as scaffolding, etc.; (*c*) transportation cost. The city council is to buy the building material, as it was thought a public body could best handle this matter under present circumstances. In carrying on the work the guild will be represented by an executive committee which will include administrative and technical advisers. "The entire working force is to be subject to the direction and discipline of men in good union standing." Provision is made for full-week or "all-weather" employment by having "one staff for both inside and outside work." In fine weather all the workers are concentrated on outside jobs and in wet weather they are shifted to inside jobs. This method will result in having many houses at different stages of completion at one time and calls for a correspondingly large working capital, but Manchester stands ready to meet this difficulty. It is alleged that this guild scheme is an advantage to the worker because it insures him regular payment and gives him a sense of responsibility to the public.

Middle Classes Union of Great Britain.[1]

AROUSED by the enormous weekly amounts that were being paid in out-of-work donations, appalled by the menace of strikes in mines and on railways, and in other essential industries, by increasing income taxation, and the rising cost of living, and feeling that existing and prospective housing legislation should also benefit the British middle classes, representatives of these classes held a crowded meeting on March 6, 1919, at Cannon Street Hotel, London, which resulted in the organization of the Middle Classes Union.

In addressing the assembly, the chairman is reported to have said:

> If you are properly organized, you will be the greatest force in the nation. You can possibly hold up all the workers. You could hold up the capitalists or you could even hold up the Government. You must see you are not squeezed or crushed and that you are placed in such a position as will necessitate a fair and square deal in all things and the right to live.

Early in March, 1920, the union celebrated the first anniversary of its organization.

Notwithstanding the special difficulties besetting the organizing of the Middle Classes Union, because of the variety of political viewpoints and individual interests of its members, according to a report made to the press by Capt. Stanley Abbott, the secretary, that organization already has 140 branches in various parts of the country. Many branches have a membership of as many as 1,500. Sections of the union are to be found in London. The home counties, the south, the midlands, and Scotland also have their Middle Classes

[1] Compiled from data in London Times, Mar. 7, 1919; and Christian Science Monitor, Jan. 16, Feb. 9, Apr. 20, and May 6, 1920.

Unionists. The Brighton and Hove branch has become so large that it is being divided in two.

The policy of the union is summarized as follows:

1. The strongest measures against Bolshevism.
2. The prevention of industrial nationalization.
3. The suppression of profiteers in exploitation and sectional tyranny.
4. More equitable distribution of taxation.
5. Representation of the "middle interests" in all political and economic affairs.

The "challenge which certain classes of labor offer to what the middle classes believe to be essentially right in the existing social order" brought about the formation of the union. The "continued existence of this challenge on the one hand, together with the aggressive policy of pure capitalism on the other," is the reason for the union's continued activity.

The Middle Classes Union does not consider itself a "strike breaker," but it is resolved to keep the whole community from being held up by any one part of the community. The union plans to aid in the carrying on of essential public services in emergencies and to ward off "lightning strikes."

Members of the Middle Classes Union are asked to back candidates who stand for the union's principles, regardless of such candidates' party affiliations. The union prepares lists of questions which are sent out to candidates for Parliament and members of the union are counseled to support candidates answering these questions satisfactorily. If all of the candidates do so, members may choose according to party lines.

The Middle Classes Union has appointed a taxation committee of experts who submitted evidence to the Royal Commission on Income Tax. The union is also represented upon the Board of Trade central profiteering committee, as well as other governmental committees.

Recent efforts have been made to organize the Association of Engineering and Shipbuilding Draftsmen, the Electrical Power Engineers Association, the Railway Clerks Association, the National Association of Colliery Managers, the Bank Officers Guild, the National Union of Journalists, the Actors Association, and the Association of Industrial Chemists into a federation of "black-coat" workers, "under the ægis of the Labor Party," which have been met by a countermovement to constitute these workers into a "third party" independent of manual workers and employers. If these black-coat organizations are not affiliated with the Middle Classes Union there is at least a likelihood that some of these associations will be represented on the grand council of that union. At any rate the trend of the black-coated workers toward "an alliance with labor" has received a check. However, this does not make it an easy task to forecast the future of the Middle Classes Union.

In connection with this brief account of the British Middle Classes Union, it is interesting to note that Hon. Edward James Gavegan, justice of the supreme court of New York, recently approved incorporation articles for "The Public Union (Inc.)," described as "a growing union of middle-class people," the aim of which is "to benefit in any way those who are not either organized manual laborers or high-salaried executives." Other aims of this new union that

are cited in the petition are "to help relieve class oppression; to protect the public by lawful means from industrial and commercial oppression; to regulate and classify all forms of voluntary service; to serve in emergency crisis and to secure representation of all middle interests in all legislative action."[1]

Census of Home Workers in Switzerland.[2]

A RECENT census of home workers in Switzerland brought out the fact that 70,874 homes are carrying on home work and that the number of home workers is 92,136. The home industry in Switzerland represents 12.4 per cent of the total number of undertakings (571,498) and the home workers 5 per cent of the total number of workers (1,851,599).

The textile industry contains the largest proportion of homes and workers carrying on home work. Embroidery occupies the most hands (35,887) and is carried on chiefly in the canton of St. Gall, but also in Appenzell and Thurgau, and in the cantons of Zurich, Schwytz, Glarus, and Grisons. Silk weaving, which occupies 12,478 home workers, is carried on mostly in the cantons of Zurich, Schwytz, and Outer Rhoden. The manufacture of silk ribbons, which occupies 7,557 home workers, is confined almost exclusively to Basel firms; the workers are to be found in the cantons of Basel (city and country), Aargau, and Soleure. The watch industry occupies 12,071 home workers but is tending to become more confined to the factories. The straw plaiting industry, which occupies 6,095 home workers, is also tending to become a factory trade by reason of the complicated articles made on looms. The chief seat of the industry is in Aargau; the home workers extend to the cantons of Lucerne, Freiburg, Obwald, and Tessin.

A census taken in the winter would show a much larger number of home workers.

Unrest Among Agricultural Labor in Northern Italy.

An article on the agrarian crisis in northern Italy appeared in the Gazette de Lausanne (Mar. 7, 1920) and is summarized in the Economic Review[3] as follows:

> At the beginning of February the Federation of the Cooperative Societies of Agricultural Laborers in the Province of Ferrara addressed to the employers' association a memorial demanding certain economic concessions. The federation, as is its wont, accompanied the memorial with a threat to strike. As the federation is an extremely powerful organization, and as the strike would occur at a moment when the spring sowings are commencing, the situation is of a nature to preoccupy not only the landowners but the entire nation.
>
> The movement soon spread to the Provinces of Rovigo, Verona, Bologna, and Reggio, the large district below the Appenines and the Trentino Mountains. The demands of the workers' syndicates are as follows: The organization of agricultural laborers must be given the sole right to decide as to the distribution of work, as to the share of the produce of the soil to be given to the workers, and as to the arranging for the accommodation of laborers on the farms and even in the houses of the owners. The syndicates also demand a reduction of the working day to seven hours, and even

[1] Evening Star, Washington, Apr. 23, 1920.
[2] Gazette de Lausanne. Lausanne, Mar. 12, 1920.
[3] Review of the Foreign Press. Economic Review, London, Mar. 24, 1920, p. 517.

to six hours for eight months of the year. The minimum wage for ordinary work is to be raised from 1.50 to 2.75 lire (29 to 53.1 cents, par) per hour. The time occupied by the laborers in proceeding to work and getting tools ready is to be counted as working time. According to the new wage schedules demanded the driver of a team of oxen would receive in money and in kind 6,000 lire ($1,158, par) per year.

The strike in the Ferrara district was postponed for 10 days because many of the laborers disapproved of these exaggerated demands and were unwilling to obey the orders of the federation of syndicates. On the other hand, the strike commenced on the appointed day in the Rovigo district. The whole movement is but an episode in the struggle carried on for years by the federation, whose aim is to transfer the ownership of the land to the laborers.

It has usually happened in Italy that in districts where peasant proprietorships have been established the socialist campaign is powerless. In Mantua, for example, 25 years ago agrarian socialism was rampant. The land was split up into farms of 60 to 70 hectares (148 to 173 acres), each giving employment to numerous laborers. The landowners then decided to subdivide the farms into holdings of 5 and 6 hectares (12.4 and 14.8 acres), each cultivated by a single family. These holdings were then let to the most intelligent among the peasants. The result was that socialist agitation ceased entirely. A similar procedure is now to be adopted in the Ferrara district, and it is hoped that it may have a like result.

Resolutions of Conference of Employers and Employees of South Africa.[1]

THE conference of employers and employees called by the Government of the Union of South Africa to meet at Pretoria, November 3–7, 1919, and again on December 8–11, and attended by delegates representing every class of employers, including mining, manufacturing, State, municipal, commercial, etc., and delegates representing various labor organizations and other associations of employees, adopted unanimously resolutions favoring—

(1) Recognition of employees' organizations by employers of labor; (2) the registration of voluntary industrial agreements entered into between representative bodies and employers and employees in any industry, and the application of the terms of such agreements to the whole of the persons engaged in that industry, either locally or throughout the Union as required; (3) the establishment of joint boards as the best means for regulation and constant exchange of views between employers and employees, and that the method of selection of representatives on the various joint boards, conferences, etc., representing both employers and employees, should (except in the case of employers' representatives in Government departments) be entirely in the hands of the unions or organizations concerned, where such exist, and should be free from Government direction or ratification, direct or indirect; (4) legislation establishing the principle of a minimum wage based on a minimum standard of living; (5) the principle of equal payment for equal work, irrespective of the sex of the person performing such work; (6) the provision of adequate and comfortable housing of the workers by the Government by means of a national housing scheme; (7) the principle of a half holiday on one afternoon per week in all trades, industries, and occupations where such is feasible; (8) legislation to limit profits on the necessaries of life; (9) an act for the regulation of apprenticeship.

Other resolutions adopted, but not unanimously, relate to nationalization of industries; a 48-hour week as a maximum for any industry, with a 44-hour week wherever practicable, and 40-hour week for workers in underground or hazardous occupations; the application of minimum-wage legislation on national lines; the abolition of systematic overtime in any industry; and the adoption of legislation providing a complete scheme of registration for all unemployed persons.

[1] Data taken from The Labor Gazette Department of Labor, Ottawa, Canada, for March, 1920, pp. 314–315.

PUBLICATIONS RELATING TO LABOR.

Official—United States.

COLORADO.—*State inspector of coal mines. Seventh annual report, 1919. Denver, 1920. 78 pp.*

Tables devoted to mining accidents show 91 fatalities and 1,283 injuries, 1 being permanent total, 25 permanent partial, and 1,257 temporary disabilities. Of the last, 682 caused a time loss of more than 14 days.

ILLINOIS.—*Industrial Commission. Annual report for fiscal year ending June 30, 1919, and statistical report for calendar years 1918 and 1917. Springfield, 1920. 49 pp.*

A brief review of this report appears on pages 175 and 176 of this issue of the REVIEW.

KENTUCKY.—*Department of Agriculture, Labor and Statistics. Bureau of Labor. Ninth biennial report, and report of Bureau of Immigration, 1918–19. Frankfort [1920]. 225 pp.*

In this report the commissioner of agriculture, labor and statistics recommends that the labor bureau be made a separate department headed by a commissioner of labor who shall be elected at the same time and in the same manner as the heads of other State departments. Provision for a woman's division in the department is also recommended. It is urged that the legal period of employment for women be reduced to eight hours per day, that one day's rest in seven be made compulsory, that the minimum period allotted for meals be three-quarters of an hour, that a rest period of 10 minutes be demanded for the middle of each working period without thereby increasing the length of the working day, that no woman be employed between the hours of 10 p. m. and 6 a. m., and that equal pay for equal work be demanded in behalf of woman workers.

The report of the bureau of immigration and state free employment states that between December 1, 1917, and November 30, 1919, there were 2,223 applications for employment by males and 750 by females. During the period 1,852 males and 534 females were placed in position.

—— *Workmen's Compensation Board. Annual report, June 30, 1918, to June 30, 1919. [Frankfort, 1919.] 82 pp.*

A digest of this report appears on pages 176 and 177 of this issue of the REVIEW.

LOUISIANA.—*Department of Labor and Industrial Statistics. Tenth biennial report, 1919–1920. New Orleans, 1920. 208 pp.*

MASSACHUSETTS.—*Bureau of Statistics. Thirty-third annual report on the statistics of manufactures for the year 1918. Boston, 1920. 133 pp. Public document No. 36.*

This report covers returns from 9,695 establishments and states that "manufacturing operations in 1918 quite generally reflected the extraordinary conditions which had characterized the preceding 12 months of 1917 and registered results surpassing all records." The average number of wage earners employed was 719,210, as against 708,421 in 1917. Whereas in 1917, 495,831, or 70 per cent of the total, were men, in 1918 the number fell to 489,237, a loss of 1.3 per cent. This decline was offset by an increase of 8.2 per cent in the number of women wage earners, the total rising from 212,590 in 1917 to 229,973 in 1918. The total amount paid to labor during the year was $679,401,273, as compared with $537,144,629 in 1917, an increase of $142,256,644, or 26.5 per cent. The average yearly earnings for all wage earners, without distinction as to age, sex, or skill, rose to $944.65 per capita, as compared with $758.23 in 1917 and $569.43 in 1913.

MASSACHUSETTS.—*Department of Labor and Industries. Division of statistics. Forty-eighth quarterly report on employment in Massachusetts, quarter ending December 31, 1919. Boston, 1920. 26 pp.*

The outstanding feature of the labor market during the final quarter of 1919 is stated to have been the continued undersupply of skilled workers in practically all of the principal trades, with an additional shortage of unskilled operatives in certain industries. The total number of strikes reported for this quarter was 78, as compared with 188 for the preceding quarter. Approximately 52,000 wage earners were involved. The estimated cost of new buildings and alterations for which permits were granted in 36 cities making reports to the department during the quarter was $26,606,195, as compared with $27,746,966 for the third quarter, or a decrease of 4.1 per cent. Activity in the boot and shoe industry, the textile industry, iron and steel manufacturing, and printing and publishing was above normal; in steam and electric transportation practically normal; and in paper products "intense." Returns from 1,244 organizations, representing an aggregate of 273,673 members, show that at the close of December, 1919, 16,438, or 6 per cent of the total number of members, were unemployed for all causes. The corresponding percentage for the close of the preceding quarter was 5.4, but it was higher for the close of December in each year of the past decade, except 1916. The three State employment offices report 37,615 positions filled during the year, as compared with 39,735 for 1918, or a decrease of 5.3 per cent. The number filled by females decreased by 387, or 2.1 per cent, while that filled by males decreased by 1,733, or 8.1 per cent.

——*State Board of Labor and Industries. Sixth annual report, 1918. Boston, January, 1919. 65 pp. Public document No. 104.*

The report of the board on inspection work shows that the total number of orders issued for the year was 12,283, of which 5,785 referred to labor, 4,467 to industrial health, and 2,031 to industrial safety. There were 2,216 complaints made to the department during the year, divided as follows: Overtime employment, 353; nonpayment of wages, 1,202; violation of eight-hour law on public works, 13; health and sanitation, 270; advertising for help without stating "strike on," 31; one day of rest in seven, 26; preference of citizens, 14; prevailing rate of wage, 3; no time notice posted, 17; employing minors without certificate, 45; employing minors under 14, 61; labor, general (including intimidation of employees, fines, employment on legal holidays, etc.), 91; miscellaneous, 90. During the year the department issued 2,031 orders for industrial safety in manufacturing and mechanical establishments, and investigated 1,548 typical injuries occurring to workmen engaged in different industries in the State. The report on the administration of the weekly payment law states that 1,202 complaints were filed during the year.

The final report of the War Emergency Commission, created shortly after the declaration of war by the United States, is included in this volume.

NEW JERSEY (Newark).—*Evening technical courses of the Newark technical school. Annual bulletin. 1920–1921. Newark [1920.] 45 pp.*

A detailed outline of the technical, trade, and preparatory courses offered by the Newark Technical School to night students for the school year, 1920–21.

OHIO.—*Industrial Commission. Union scale of wages and hours of labor in Ohio on May 15, 1919. Columbus, December 17, 1919. 35 pp. Department of Investigation and Statistics, Report No. 38.*

This pamphlet gives the union scale of wages and hours of labor of street car employees and teamsters and chauffeurs, and of various occupations in the bakery, building, metal, and printing trades. The regular rates per hour, the overtime rates, and the Sunday and holiday rates are given; also the hours of labor per full day and per week, and in most instances, the hours of labor per short day and the number of months in the year in which the half holiday is in effect.

OREGON.—*Industrial Accident Commission. Third report showing the cumulative experience for the three-year period ending June 30, 1918. Workmen's compensation law. Salem, 1920. 81 pp.*

A summary of this report is given on pages 178 and 179 of this issue of the REVIEW.

PENNSYLVANIA.—*Department of Labor and Industry. Third annual report, 1916. Part 2. Harrisburg, 1918. 1176 pp.*

—— —— *Industrial board. Bulletin of Information. Nos. 1, 2, 4, 5, 7, 8, 9, Nov. 3, 1919–May 15, 1920. Mimeographed.*

The initial copy of this bulletin states that its purpose is to keep the members of the department informed of the work of the industrial board and to invite cooperation in the interests of the entire department.

PORTO RICO.—*Department of Agriculture and Labor. Report, 1919. Washington, 1919. From the report of the Governor of Porto Rico, 1919, pages 685–713, inclusive.*

TENNESSEE.—*Bureau of Workshop and Factory Inspection. Seventh annual report, 1919. Nashville, 1920. 73 pp.*

Material changes made by the general assembly in the labor department—formerly known as the State factory inspection department—include the making of the department a subsidiary bureau of the State mining department, the chief mine inspector being given general control and direction of the new bureau of workshop and factory inspection, and the giving to the bureau, by enactment of the workmen's compensation law, the handling of accident reports, and the adjustment of compensation claims and settlements. This report includes a directory of industries inspected, with the number of employees; and sections on woman labor in Tennessee, Regulation of child labor, Industrial accident reporting, and workmen's compensation law.

WASHINGTON.—*Industrial Insurance and Medical Aid Department. Eighth annual report for the 12 months ending September 30, 1919. The Workmen's compensation act. Olympia, 1920. 95 pp.*

A brief review of this report appears on pages 179 to 181 of this issue of the REVIEW.

WISCONSIN.—*Industrial Commission. Apprenticeship in Wisconsin. Third report. [Madison] 1919. 18 pp.*

A brief summary of this report is given on page 220 of this number of the REVIEW.

WYOMING.—*Coal Mine Inspector. Annual report, 1919. Cheyenne, 1920. 71 pp.*

Twenty-five fatal and 146 nonfatal accidents were reported in district No. 1, as compared with 30 fatal and 190 nonfatal accidents for the previous year. As 4,902 men were employed in and around the mines, the ratio of fatal accidents per 1,000 men employed was 5.1 and of nonfatal accidents 29.78. The number of fatal accidents reported by district No. 2 for 15 months ending December, 1919, was 17 and of nonfatal 44.

—— *Workmen's Compensation Department. Fourth report, 1919. Laramie, 1920. 165 pp. Employer's number.*

This report is noted on pages 181 and 182 of this issue of the REVIEW.

UNITED STATES.—*Department of the Interior. Bureau of Mines. Metal-mine accidents in the United States during the calendar year 1918. Washington, 1920. 113 pp. Technical paper 252.*

A brief review of this report appears on pages 164 and 165 of this issue of the REVIEW.

—— *Federal Board for Vocational Education. Employment management. Washington, January, 1920. 34 pp. Employment management series No. 1. Bulletin No. 50.*

The functions of an employment manager are defined in the report as follows: Hiring shop employees and sometimes office employees as well; taking charge of transfers and discharges; assisting in determining rates of pay; supervising working

conditions; adjusting grievances; and studying the causes of labor turnover and methods of reducing it. The relative weights of the five principal qualifications necessary in the successful employment manager are: Personality, 35 per cent; general industrial experience, 25 per cent; executive experience, 20 per cent; shop experience (for employment managers in manufacturing establishments), 15 per cent; experience with organized social movements, 5 per cent.

While the employment manager idea spread rapidly during the war, it has been estimated that only about 10 per cent of the factories which are large enough to support central employment departments have started them.

UNITED STATES—*Federal Board for Vocational Education. The labor audit, a method of industrial investigation. Washington, January, 1920. 48 pp. Employment management series No. 8. Bulletin No. 43.*

The subjects covered in the labor audit are grouped under three general heads: The employment organization, which comprises working conditions, turnover, job analysis, methods of selection and of starting work, and training; the outside economic and industrial forces not under the control of the management but with which it has to deal; and the wages and total earnings, which include the form and efficiency of management, the amounts and methods of pay, and various welfare provisions.

The labor audit is useful to the management as a method of standard record and analysis and as an aid in solving the particular industrial problems of the plant; to the personnel manager because it affords the broadest view of the problem he has to meet and helps to formulate his policy; to the workers because it will, if fairly conducted, serve as a means for correcting the injustices from which they may suffer; and to the community because of the dissemination of knowledge, which in the event of labor disputes will enable the public to exert an influence according to the facts of the case. In general, it should result in a comprehensive and far-sighted program for bettering conditions and establishing a more just relationship.

—— —— *The turnover of labor. Washington, November, 1919. 60 pp. Employment Management Series No. 6. Bulletin No. 46.*

A study of the relative extent of turnover among different classes of employees shows, as would be expected, that it is usually much greater among the unskilled workers than among the skilled or the clerical employees. It is stated that the proportion of turnover due to discharges is often much exaggerated and that a comparison of postwar with prewar figures for certain groups of establishments shows a reduction of almost one-half in this class of separations. This improvement is ascribed to two reasons: The great demand for labor during the war and the consequent reluctance to "fire" unnecessarily and the improvement in employment methods and establishment of centralized employment departments. A summary of measures which have been advocated as necessary for the maintenance of a stable working force is as follows: "(1) Good pay and steady work; (2) the careful selection and placement of help; (3) a well-organized employment department; (4) installation of some system for the hearing and adjustment of complaints."

—— —— *The wage-setting process. Washington, November, 1919. 32 pp. Employment management series No. 5. Bulletin No. 44.*

In determining a wage in proportion to the task, consideration is given to the quantity and quality of the product, the amount of energy required or of fatigue produced, and to the nature of the working conditions. In order to fix standards it is necessary to analyze all these elements and upon determination of a standard process and of standard working conditions it is possible to fix a standard space or a proper work-and-rest schedule. To do this, time studies and fatigue studies must be made. The payment methods, which include the day rate, the ordinary piece rate, differential piece rates, and various bonus and premium plans, are discussed.

UNITED STATES—*Federal Trade Commission. Food investigation. Report on private car lines, June 27, 1919. Washington, 1920. 271 pp.*

In three parts: Part I, General survey of private car lines; Part II, The packer car lines and their relations to the public; Part III, Nonpacker car lines.

——— ——— ——— *Report on the meat-packing industry. Part IV, June 30, 1919; Part VI, December, 1919. Washington, 1920. 390, 183 pp.*

Part IV considers The five larger packers in produce and grocery foods; Part VI, Cost of growing beef animals, Cost of fattening cattle, and Cost of marketing live stock.

——— ——— ——— *Report on the wholesale marketing of food. June 30, 1919. Washington, 1920. 268 pp. Maps.*

——— *Treasury Department. Bureau of War Risk Insurance. Compensation—medical and surgical treatment and supplies—artificial arms, legs, eyes—trusses—wheelchairs, etc., under the war risk insurance act as amended December 24, 1919. Washington, 1920. 12 pp. Important information for former soldiers, sailors, and marines, and their relatives and beneficiaries (also of interest to active service men).*

Official—Foreign Countries.

AUSTRALIA (NEW SOUTH WALES).—*Board of Trade. Declaration of the 23d December, 1919, as to the living wage to be paid to adult female employees. Sydney, 1920. 3 pp. Published in Government Gazette No. 2 of 2d January, 1920.*

——— *Department of Labor and Industry. Report with an historical review on the operations of the department during the year 1918. [Including the 22d series of annual reports of inspectors under the factories and shops act, 1912.] Sydney, 1920. 183 pp. Illustrated.*

Sections are devoted to the ministerial office, board of trade, special commissioner for conciliation, industrial registrar's office, office of chief inspector of factories and investigation officer, State labor exchanges and immigration branch, office of departmental engineer and chief inspector of scaffolding and lifts, and gas examiner's office. Figures covering the operation of the Workmen's Compensation Act, 1916, for the year 1918 show that there were 69 death cases in which compensation was payable under the act, as against 34 for the preceding year, and 65 in 1914; incapacity cases compensated by weekly payments increased by nearly 150 per cent, the number being 4,689 in 1917, and 11,504 in 1918. The total compensation paid increased from £52,358 ($254,800.21, par) in 1917 to £117,384 ($571,249.24, par) in 1918. Seventeen cases of industrial diseases due to employment were reported as follows: Lead poisoning, 10 cases; nystagmus, 5; cellulitis of arm, 1; phosphorus poisoning, 1. The total compensation paid in respect of these injuries was £367 ($1,786, par).

CANADA.—*Department of Labor. Report for the fiscal year ending March 31, 1918. Ottawa, 1919. 47 pp. [No. 36, 1919.]*

——— (MANITOBA).—*Workmen's Compensation Board. Report for 1919. Winnipeg, 1920. 32 pp.*

A brief digest of this report appears on pages 182 and 183 of this issue of the REVIEW.

——— (ONTARIO).—*Bureau of Municipal Affairs. Report re housing for 1919 including reports of officials, statements as to operations of housing commissions, plans, etc. Toronto, 1920. 140 pp. Illus.*

Report of activities under the Ontario Housing Act, March 20, 1919, during the first year of its operations. Ninety-nine cities in Ontario have housing commissions, and 68 have commenced the building of houses under the scheme of Government loans for that purpose. Of the total Federal loan Ontario's share was $8,753,291.93, and the Province agreed to add $2,000,000. The total appropriated to municipalities is $10,629,000. If all requirements of the municipalities are met for 1920 about $8,000,000 will be necessary for housing loans. The number of houses erected by the cities is 1,184; the total loans made on them, $3,677,974; and the average loan per house, $3,106.40. Practically two-thirds of the houses for which loans have been made have six rooms.

CANADA (ONTARIO).—*Bureau of Municipal Affairs. Housing Committee. Report on the treatment of the surroundings of the small home; including (1) the subdivision of land for industrial housing and (2) the layout of the individual lot. Toronto, 1919. 35 pp.*

—— (QUEBEC).—*Bureau of Statistics. Statistical year book. 6th year. Quebec, 1919. xvii, 666 pp.*

Part 6 of this report is devoted to organized labor, giving a brief summary of the provisions and operation of the Quebec Trades Disputes Act, and summaries of the Workmen's Dwellings Act and the Minimum Wage Act. Other labor legislation is cited. A tabulation shows a total of 366 trades unions with a membership of 48,570 in 1918, or an increase of 73.4 per cent over 1917. There are brief strike statistics, covering the years 1901 to 1918, inclusive. The report includes a statistical statement of the work of the provincial employment bureaus from 1911 to 1918; and also a table of accidents to workmen, classified by trade or industry and by nature of accident. There were 154 fatal accidents in 1918, the largest number, 37, being in steam railway services.

—— —— [*Department of Labor.*] *Laws concerning the inspection of industrial establishments and public buildings. Edited by Gustave Francq under the direction and approval of the Department of Labor of the Province of Quebec. Quebec, 1920. 132 pp.*

The title of this booklet does not indicate its scope, which is said in the "Foreword" to be a "compilation of labor laws" which "could justly be named the labor code of the Province of Quebec." It includes also the conventions and recommendations adopted by the International Labor Conference, held at Washington, D. C., October–November, 1919. All matter is given in both French and English. There is an index, and a roster of the officers and principal employees of the department of public works and labor, department of factory inspection, public employment service, etc.

DENMARK.—*Statistiske departement. Statistisk Aarbog 1919 udgivet af det Statistiske departement. Copenhagen, 1920. 252, 4 pp.*

Statistical yearbook of the Kingdom of Denmark for the year 1919 containing among other material summary tables of statistics of retail prices, workmen's compensation, sick benefit funds, unemployment relief funds, amount of unemployment, wages, hours of labor, wages of agricultural workers and domestic servants, apprentices, cooperation, and cost of living.

GREAT BRITAIN.—*Board of Trade. Industrial Life Assurance Committee. Minutes of evidence. London, 1920. 278 pp. Cmd. 618.*

—— [*Home Office.*] *Committee on the use of lead in painting of coaches, etc. Report of the departmental committee appointed to investigate the danger attendant on the use of lead compounds in the painting, enameling, and varnishing of coaches and carriages. London, 1920. 43 pp. Cmd. 630.*

This report forms Volume II of a series of four reports, Volume III of which is listed below. It contains a summary of the evidence given, including testimony concerning experience with leadless materials, and an analysis of the evidence covering the extent of lead poisoning, principal sources of danger, and methods of dealing with lead poisoning.

—— —— *Committees on the use of lead in painting. Reports of the departmental committees appointed to investigate the danger attendant on the use of paints containing lead in the painting of buildings and in the use of lead compounds in the painting, enameling, and varnishing of coaches and carriages. London, 1920. Cmd. 631.*

This report forms Volume III of a series of reports, Volume I of which, on the use of lead in the painting of buildings, was published in 1915, Volume II, listed immediately above, and Volume IV, containing the minutes of the evidence taken by both committees, not yet received. The appendixes give statistical tables, regulations of several countries in regard to the use of lead, and method of making tests and results

of these various experiments to determine the relative danger of different kinds of exposure.

GREAT BRITAIN.—*Laws, statutes, etc. Coal Mine (Emergency) Act, 1920. London, 1920. 13 pp.* [*10 Geo. 5, ch. 4.*]

—— —— *Manuals of emergency legislation. Food-supply manual revised to November 30, 1919, comprising the food controller's powers and orders and certain consequential orders of other departments. London, 1920. 549 pp.*

—— *Ministry of Labor. Report on profit sharing and copartnership in the United Kingdom. London, 1920. 244 pp. Bibliography.*

A brief summary of this report appears on pages 144 and 145 of this issue of the REVIEW.

—— —— *National trade advisory committee. Reports upon openings in industry suitable for disabled sailors and soldiers. No. 5 (Revised).—The furniture trade. No. 8 (Revised).—The gold, silver, and allied trades. No. 25 (Revised).—The musical instruments trade. No. 27 (Revised).—The glass trades. London, March, 1920. 19, 13, 19, 14 pp.*

—— *National Health Insurance joint committee. Medical Research Committee. An investigation into the epidemiology of phthisis in Great Britain and Ireland. London, 1920. 98 pp. Special report series, No. 46.*

—— *Registrar of Friendly Societies. Reports for the year ending 31st December, 1917. Part C.—Trade Unions. London, 1920. 48 pp.*

This report, which relates to registered trade-unions only, states that during 1917 the membership of employees' unions reached 4,396,279, an increase of 19 per cent over 1916. The largest increases in total membership were in the general and engineering groups, which increases were over 210,000 and 140,000, respectively, while the greatest proportional increase was in the agricultural group, where the membership rose from 22,197 at the end of 1916 to 36,994 at the end of 1917. Female membership increased from 120,191 in 1914 to 447,404 in 1917. The income during the year was £5,807,776 ($28,263,542, par), of which 88.2 per cent was contributed by members. During the year £1,703,241 ($8,288,822, par) was expended on benefits to members, including unemployment, dispute, sick and accident, and superannuation.

PEACE CONFERENCE.—*Supreme Council. Declaration on the economic conditions of the world. London, His Majesty's stationery office, 1920. 8 pp. Cmd. 646.*

Unofficial.

AMERICAN FEDERATION OF LABOR. *Connecticut Branch. Official proceedings. Thirty-fourth annual convention, held in Meriden, Conn., June 2, 3, 4, 5, 1919. New Haven, I. M. Ornburn, secretary, 1919. 34 pp.*

ARNOT, R. PAGE. *Further facts from the coal commission, being a history of the second stage of the coal industry evidence, with excerpts from the evidence. Compiled for the Miners' Federation of Great Britain, with a preface by Robert Smillie and Frank Hodges. London, Labor Research Department* [*1920*], *47 pp.*

A former pamphlet by the same author entitled "Facts from the coal commission" was noted in the January, 1920, issue of the MONTHLY LABOR REVIEW, page 295; and articles containing accounts of the coal commission were published in the May and August, 1919, issues, pages 109 to 114 and 78 to 86, respectively.

BLOOMFIELD, DANIEL (COMPILER). *Problems of labor. New York, The H. W. Wilson Co. 1920. 436 pp. The handbook series.*

This book is a compilation of articles which have appeared in various publications on the following subjects: Causes of friction and unrest; Cost of living; Methods of compensation; Hours of work; Tenure of employment; Trade-unionism; Labor disputes; Limitation of output; Industrial insurance; Social insurance; Housing; Methods of promoting industrial peace; Occupational hygiene; and Women in industry. A short bibliography on each subject is included.

CARNEGIE, DAVID. *Can church and industry unite? London, Marshall Brothers (Ltd.). 1920. 181 pp.*

This book discusses the past relationship of the working classes and the church and the possibility of the two merging their aims and ideals into one forward movement. The general survey of the field and of the endeavors which have been made toward cooperation leads up to the author's plan for "one big union" of the church comprised of representatives and members of all organized Christianity, of employers and employed.

CHICAGO COUNCIL OF SOCIAL AGENCIES. *Committee on Relief. The Chicago standard budget for dependent families, by Florence Nesbitt. Chicago, 168 North Michigan Avenue, April, 1919. 39 pp. Bulletin No. 5.*

CONSUMERS' LEAGUE OF NEW YORK STATE AND CONSUMERS' LEAGUE OF THE CITY OF NEW YORK. *Women's wages to-day: One reason for a legal minimum in New York State. New York, February, 1920. 12 pp.*

DEUTSCHER BUND HEIMATSCHUTZ UND VEREINIGUNG FUR DEUTSCHE SIEDLUNG UND WANDERUNG. *Die Wohnungs- und Siedlungsfrage nach dem Kriege. Unter Mitarbeit zahlreicher Fachmänner herausgegeben von Carl Johannes Fuchs. Stuttgart, 1918. XI, 455 pp. Illustrated.*

This volume, issued under the auspices of the German Federation for the Protection of the Home and the Association for German Settlement and Migration by Dr. Carl Johannes Fuchs with the collaboration of a number of German authorities on housing work, evolves a post bellum program for housing and settlement work in Germany. The introduction to the volume discusses the historical development of workmen's housing in Germany, Austria, and foreign countries, especially in England and Belgium, the housing density in London, Paris, Greater Berlin, and Vienna, and the relation of rent to income. The first part of the volume treats of methods and means of producing housing and the economic and architectural considerations governing it. The second part deals with the tasks of the future and proposed reforms of the present housing system.

FUNRISS, A. D. SANDERSON AND PHILLIPS, MARION. *The working woman's house. London, The Swarthmore Press (Ltd.), 1920. 84 pp. Illustrated. Plans.*

Chapters are on The views of the woman in the home, The inside of the house, Cooperative house management, The healthy town, and The new housing act and women's needs.

GAEBEL, KÄTHE AND VON SCHULZ, M. *Die Heimarbeit im Kriege. Berlin, 1917. 210 pp. Bibliography.*

This volume deals with homework in industries in Germany in general and with homework during the war in particular. It discusses the provisions of the Industrial Code relating to homeworkers, The German homeworkers' law, Social insurance of homeworkers, The protective laws for homeworkers of foreign countries (England, Austria, France, Norway, and the United States), Employment of homeworkers in the manufacture of military equipment (leather articles and clothing), The organizations of homeworkers (trade-unions and cooperative societies), The employment of war invalids in homeworking industries, Homeworking combined with agriculture, and The future prospects of German homeworking industries.

GASTON, HERBERT E. *The Nonpartisan League. New York. Harcourt, Brace & Howe. 1920. 325 pp.*

This book is a history of the foundation and growth of the National Nonpartisan League, written from the sympathetic viewpoint of one who has been active in the affairs of the league.

GRUNSKY, C. E. *A commodity unit to supplement money as a standard of value. In Transactions of the Commonwealth Club of California. San Francisco. March, 1920, pp. 5–22.*

The various plans and theories being advanced by economists and business men for stabilizing the money unit or insuring against the shrinkage in value of long-time

credits are of interest at this period of the rapid decline in the purchasing power of the dollar. A paper on "A commodity unit to supplement money as a standard of value" was read recently by Mr. C. E. Grunsky before the Commonwealth Club of California, in which he advocated the establishment of a standard which should be fixed, not upon a metal, but upon a definite quantity of necessities such as food, fuel, etc., which are essential for the ordinary comfort of the family. In determining the commodity unit, or "com" as the author calls it, it is suggested that the quantities of each of the 250 or more articles which the United States Department of Labor uses when it fixes the general commodity "index number" should be taken in the proportion of family consumption which would at the average wholesale prices during the 10 years, 1900 to 1909, have been purchasable, for example, for $1,000. One "com" would then be one thousandth part of these various quantities. After fixing upon this standard all transactions would be made in "coms" instead of in dollars and the payment would be made in money according to the relation existing at the time of payment between the two. The principle may be shown by the following illustration: If a loan is made in terms of "coms" instead of in terms of gold, 1,000 "coms" might be equal to $1,130 at the time the loan is made, but when the capital is returned it will still be 1,000 "coms" although in terms of money it may be equivalent to more or less than $1,130 according to whether the value of the dollar has gone up or down.

This system, the author claims, would be of particular value in every transaction in which the element of time enters, as, for instance, salaries, wages, rents, investments, and loans, and it could be introduced into the business and industrial life of the country with practically no difficulty.

HASKELL, ALLAN C. *How to make and use graphic charts. New York. Codex Book Co. (Inc.). 1919. 539 pp. Bibliography.*

This is an exhaustive study of the theory and construction of the various kinds of charts and of the uses to which they may be put. It contains illustrations and typical examples which may be adapted to individual requirements, and gives valuable directions for the proper use of charts and methods for getting the best results.

HOFFMAN, FREDERICK L. *The mortality from respiratory diseases in the glass industry. In Journal of Industrial Hygiene, Vol. II, No. 1. Boston, May, 1920. Pp. 1–5.*

In view of the excessive mortality from pulmonary tuberculosis and possibly from nontuberculous respiratory diseases among certain occupations in the glass industry, and of the inadequate data so far collected in regard to the special hazards of the industry, the author advocates an extensive investigation similar to that being carried on among the granite workers of Vermont by the committee on dusty trades of the National Tuberculosis Association with the cooperation of various other agencies. He says "It is sincerely to be hoped that such an investigation will be made so that the facts may be known, and if conditions prove to be better than assumed, a further reduction in extra premium charges for life insurance may accrue to the benefit of wage-earners in the glass industry, and material restrictions may be removed in the case of occupations at the present time considered doubtful."

INDEPENDENT LABOR PARTY (GREAT BRITAIN). *Pamphlets. New Series, No. 1, International socialism and world peace. Resolutions of the Berne Conference, February, 1919; No. 3, The mine owners in the dock. Startling disclosures: A summary of the evidence given before the coal industry commission. London, 8 and 9, Johnson's Court, Fleet Street EC. 4, 1919. 15, 16 pp.*

JOSEPHSON, AKSEL, G. S. *Bibliographical notes on some books about reconstruction. Chicago, 1919. 11 pp. Elbert H. Gary Library of Law, Northwestern University Law School, Bulletin No. 2.*

LEGGE, THOMAS M. *Industrial diseases under the Workmen's Compensation Act. In Journal of Industrial Hygiene. Vol.II, No. 1, Boston, May, 1920. Pp. 25–32.*

Deals with the results of scheduling notifiable industrial diseases under the Workmen's Compensation Act of 1906, Great Britain.

LEGGE, THOMAS M. *Twenty years' experience of the notification of industrial diseases. In Journal of Industrial Hygiene, Vol. 1, No. 12. Boston, April, 1920. Pp. 590–596.*

Cutter lecture in preventive medicine and hygiene, delivered at the Harvard Medical School, December 8, 1919. Figures are given which "emphasize the value to be obtained from notification of clearly defined industrial diseases when sufficient time is given by a medical man to the elucidation of the subject."

LIBRARY BUREAU. *Filing as a profession for women. Boston, 1919. 49 pp.*

LITCHFIELD, PAUL W. *The Industrial Republic. Akron, Ohio. The Superior Printing Co. 1919. 73 pp.*

The author sketches briefly the causes leading up to the present industrial unrest, the reasons for the warfare between capital and labor, and the present status of the labor-capital opposition. A remedy for industrial troubles is found by the writer in the establishment of shop committee systems following the plan of Government of the United States, as he believes conditions within industries are analogous to those the same individuals have to meet as citizens of the Republic.

MASTERMAN, J. HOWARD B., EDITOR. *Clerical incomes. An inquiry into the cost of living among the parochial clergy, by 11 diocesan contributors. London, G. Bell & Sons (Ltd.), 1920. 307 pp.*

A volume of essays which aims to show how pressing is the problem of the poverty of the English clergy rather than to propound a solution of the problem. The last chapter, however, deals with Remedies for the poverty of the clergy.

MAXWELL, A. V., COMPILER. *New South Wales industrial arbitration acts and regulations, with amendments incorporated to August, 1918. With a complete index. Sydney, The Law Book Co. of Australasia (Ltd.), August, 1918. 113 pp.*

MORTON, D. S. *The 40 hours strike: An historic survey of the first general strike in Scotland. Clydebank (Scotland), Thos. Kane, 52 Second Avenue, [1919]. 16 pp.*

NATIONAL ASSOCIATION OF EMPLOYMENT MANAGERS. *Relationships and adjustments between employer and employed. Minutes of the second bimonthly conference, Chicago, December 13, 1919. Newark, N. J., C. Wolber Co. (Inc.). [1919.] 77 pp.*

NATIONAL CIVIC FEDERATION. *Social Insurance Department. Committee on Constructive Plan. A refutation of false statements in propaganda for conpulsory health insurance. New York, Metropolitan Tower, October, 1919. 43 pp.*

NATIONAL COMMITTEE FOR CONSTRUCTIVE IMMIGRATION LEGISLATION. *A proposed act amending the immigration laws. New York, 105 East Twenty-second Street, April 25, 1920. 16 pp.*

The general character of the proposed changes are: (A) Rearrangement and grouping of existing provisions; (B) Providing for an immigration commission; (C) Limiting future immigration by annual determination by Secretary of Labor, on report of Commission as to "maximum number of aliens of each nationality" or "percentage of each ethnic group" on basis of (1) Record of previous assimilation of their immigrants into our citizenship; (2) Needs of our labor market, including domestic servants; (D) As thus limited, repealing discriminatory acts and those in contravention of United States treaties.

——— *Proposed amendments to the naturalization laws. New York, 105 East Twenty-second Street, April 25, 1920. 2 pp.*

These proposed amendments embrace: (1) Raising the standards of naturalization; (2) Extending the privileges of naturalization to all who qualify; (3) Repealing existing laws inconsistent with these provisions.

NATIONAL CONSUMERS' LEAGUE. *Pamphlets. The eight-hour day and rest at night, by statute; Equal opportunity for women wage earners—facts vs. fiction; Standard minimum wage bill; Minimum wage commissions—current facts. New York, 44 East Twenty-third Street, 1920. 12, 10, 8, 15 pp.*

NATIONAL MARINE ENGINEERS' BENEFICIAL ASSOCIATION OF THE UNITED STATES OF AMERICA. *Journal of proceedings. Minutes of 45th annual convention, January 19–24, 1920. Buffalo, N. Y., George A. Grubb, secretary-treasurer, 356 Ellicott Building, 1920. 574 pp.*

NATIONAL SAFETY COUNCIL. *Safe practices. No. 29. Electrical equipment in industrial plants. Chicago, 168 North Michigan Avenue, [1920]. 16 pp. Illustrated.*

NATIONAL SAFETY COUNCIL. *Safe practices. No. 33. Hoisting apparatus. Chicago, 168, North Michigan Avenue, 1920. 14 pp. Illustrated.*

PETTIT, WALTER W. *Self-supporting students in certain New York City high schools. Studies in social work. New York, School of Social Work, 105 East Twenty-second Street, 1920. 87 pp.*

PHYSICIANS PROTECTIVE ASSOCIATION OF ERIE COUNTY (NEW YORK). *Compulsory health insurance and labor. How the interests of the workers would be affected by this legislation. Buffalo, 153 Delaware Avenue. [1920.] 16 pp.*

—— *Notes on compulsory health insurance. Buffalo, 153 Delaware Avenue. [1920.] 22 pp.*

PROSSER, J. E. *Piece-rate, premium and bonus. London, Williams & Norgate, 1919. 122 pp.*

Discusses scientific management, profit sharing, and the various premium and bonus systems in use, including the Halsey, Rowan, Emerson, and Knoeppel systems. In appendixes a comparison of wage systems is made, and the Lever Bros. (Ltd.) copartnership scheme and profit sharing in the United States are considered.

RAILROAD LABOR ORGANIZATIONS. *Report of proceedings in connection with 1919–20 wage movement. Statement by the chief executives, signatory hereto, to their respective constituencies, setting forth fully the progress of our negotiations since February 3, when we entered into a discussion of the wage question with the Director General of Railroads. Washington, National Publishing Co., Feb. 16, 1920. 20 pp.*

—— *Supplementary report of proceedings in connection with 1919-20 wage movement covering period February 15 to March 4, 1920. Washington, National Publishing Co., 1920. 14 pp. Circular No. 3.*

RETAIL SHOE SALESMEN'S INSTITUTE. *Materials in shoes. Volume 3, constituting part of the training course for retail shoe salesmen. Boston, 1920. 190 pp.*

SOUTHWESTERN INTERSTATE COAL OPERATORS' ASSOCIATION. *The strike history of district No. 14 of Kansas from April 1, 1916, to December 31, 1919. Kansas City, 1920. 31 pp.*

STARR, E. B. *Excessive mortality from influenza-pneumonia among bituminous coal miners of Ohio in 1918. In American Journal of Public Health, Vol. 10, No. 4. Chicago, April, 1920. Pp. 348–351.*

The author gives the following figures as illustrative of the excessive mortality from influenza-pneumonia among coal miners in Ohio:

The total deaths from all causes among Ohio coal miners in 1918 was 1,023, a rate of 19.2 per thousand employed, as against a total in 1917 of 571 deaths, or a rate of 11.1 per thousand employed. The latter rate is not far from that found by Hayhurst [1] among Illinois coal miners for the six and one-half year period, February 1, 1912, to July 21, 1918; namely, 10.8 per thousand employed.

Of 39,565 deaths from all causes among males 15 years of age and over, in Ohio in 1918 (excluding coal miners), 11,989, or 30.3 per cent, were due to influenza-pneumonia, whereas 458 deaths, or 44.7 per cent, of the total deaths among Ohio coal miners were due to influenza-pneumonia. Though these percentages certainly indicate a preponderance of influenza-pneumonia mortality among coal miners they do not in themselves represent the true relation when one considers the distortion resulting from the large mortality among miners due to deaths from violence. * * * By eliminating this distortion, due to violence, the relation between influenza-pneumonia mortality percentages in coal miners and males of the State at large appears in a truer light. The percentage of total deaths due to influenza-pneumonia among coal miners is then 55.9 as against 33.1 among males of 15 years and over in the State at large.

[1] Hayhurst, E. R.: Report of the Health Insurance Commission, State of Illinois, May 1, 1919, pp. 376–402. Journal of Industrial Hygiene, 1, No. 7 (November), 1919, pp. 360–367.

If one may hazard the statement of a death rate from influenza-pneumonia among males of 15 years and over, in the State at large (excluding miners), based upon an estimate of 1,886,000 males, we may compute a rate of 635 per 100,000 as against a rate of 862.6 per 100,000 from the same cause among miners.

TIMKEN SERVICE BUREAU. *Industrial Department. Compromise methods of harmonizing the relations between workers and employers. A defense of premium and bonus plans of compensation. Baltimore, Keyser Building, 1920. 10 pp.*

TRADES UNION CONGRESS. *Parliamentary Committee. Trade-union movement and political issues. London, 32, Eccleston Square, SW1. [1919.] 11 pp.*

UNITED STATES STEEL CORPORATION. *Eighteenth annual report for the fiscal year ended December 31, 1919. Hoboken, N. J. 1920. 52 pp.*

VEILLER, LAWRENCE. *A model housing law. Revised edition. New York, Russell Sage Foundation, 1920. 430 pp.*

VERBAND DER GEMEINDE- UND STAATSARBEITER. *Protokoll der Verhandlungen der dritten Konferenz des Krankenpflege-, Massage- und Bäderpersonals Deutschlands. Berlin, 1920. 160 pp.*

The minutes of the third conference of German hospital nurses and employees in massage and bathing establishments held at Jena, Nov. 30 and Dec. 1, 1919. The conference discussed the vocational training, the economic situation, and the organization of hospital nurses and the bill regulating their hours of labor.

WHITTAKER, CHARLES HARRIS. *The joke about housing. Boston, Marshall Jones Company, 1920. ix, 233 pp.*

This is a discussion of the housing problem not alone from the point of view of providing houses for the workers but also in relation to other problems related to the economic system, chiefly the question of land control.

ZENTRALVERBAND DEUTSCHER KONSUMVEREINE. *Jahrbuch. Siebzehnter Jahrgang, 1919. Hamburg, 1919. 2 vols. (1035, 1127 pp.).*

The yearbook of the Central Federation of German Consumers' Cooperative Societies for 1919, containing statistical data of the German cooperative movement, and particularly of the consumers' cooperative movement. Some of the data given are found in this issue of the MONTHLY LABOR REVIEW, pp. 132 to 135.

SERIES OF BULLETINS PUBLISHED BY THE BUREAU OF LABOR STATISTICS.

[*The publication of the annual and special reports and of the bimonthly bulletin was discontinued in July, 1912, and since that time a bulletin has been published at irregular intervals. Each number contains matter devoted to one of a series of general subjects. These bulletins are numbered consecutively, beginning with No. 101, and up to No. 236; they also carry consecutive numbers under each series. Beginning with No. 237 the serial numbering has been discontinued. A list of the series is given below. Under each is grouped all the bulletins which contain material relating to the subject matter of that series. A list of the reports and bulletins of the Bureau issued prior to July 1, 1912, will be furnished on application. The bulletins marked thus * are out of print.*]

Wholesale Prices.

* Bul. 114. Wholesale prices, 1890 to 1912.
Bul. 149. Wholesale prices, 1890 to 1913.
* Bul. 173. Index numbers of wholesale prices in the United States and foreign countries.
Bul. 181. Wholesale prices, 1890 to 1914.
Bul. 200. Wholesale prices, 1890 to 1915.
Bul. 226. Wholesale prices, 1890 to 1916.
Bul. 269. Wholesale prices, 1890 to 1919. [In press.]

Retail Prices and Cost of Living.

* Bul. 105. Retail prices, 1890 to 1911: Part I.
Retail prices, 1890 to 1911: Part II—General tables.
* Bul. 106. Retail prices, 1890 to June, 1912: Part I.
Retail prices, 1890 to June, 1912: Part II—General tables.
Bul. 108. Retail prices, 1890 to August, 1912.
Bul. 110. Retail prices, 1890 to October, 1912.
Bul. 113. Retail prices, 1890 to December, 1912.
Bul. 115. Retail prices, 1890 to February, 1913.
* Bul. 121. Sugar prices, from refiner to consumer.
Bul. 125. Retail prices, 1890 to April, 1913.
Bul. 130. Wheat and flour prices, from farmer to consumer.
Bul. 132. Retail prices, 1890 to June, 1913.
Bul. 136. Retail prices, 1890 to August, 1913.
* Bul. 138. Retail prices, 1890 to October, 1913.
Bul. 140. Retail prices, 1890 to December, 1913.
Bul. 156. Retail prices, 1907 to December, 1914.
Bul. 164. Butter prices, from producer to consumer.
Bul. 170. Foreign food prices as affected by the war.
* Bul. 184. Retail prices, 1907 to June, 1915.
Bul. 197. Retail prices, 1907 to December, 1915.
Bul. 228. Retail prices, 1907 to December, 1916.
Bul. 266. A study of family expenditures in the District of Columbia. [In press.]
Bul. 270. Retail prices, 1913 to 1919. [In press.]

Wages and Hours of Labor.

Bul. 116. Hours, earnings, and duration of employment of wage-earning women in selected industries in the District of Columbia.
Bul. 118. Ten-hour maximum working-day for women and young persons.
Bul. 119. Working hours of women in the pea canneries of Wisconsin.
* Bul. 128. Wages and hours of labor in the cotton, woolen, and silk industries, 1890 to 1912.
* Bul. 129. Wages and hours of labor in the lumber, millwork, and furniture industries, 1890 to 1912.
* Bul. 131. Union scale of wages and hours of labor, 1907 to 1912.
* Bul. 134. Wages and hours of labor in the boot and shoe and hosiery and knit goods industries, 1890 to 1912.
* Bul. 135. Wages and hours of labor in the cigar and clothing industries, 1911 and 1912.
Bul. 137. Wages and hours of labor in the building and repairing of steam railroad cars, 1890 to 1912.
Bul. 143. Union scale of wages and hours of labor, May 15, 1913.
Bul. 146. Wages and regularity of employment and standardization of piece rates in the dress and waist industry of New York City.

Wages and Hours of Labor—Concluded.

Bul. 147. Wages and regularity of employment in the cloak, suit, and skirt industry.
Bul. 150. Wages and hours of labor in the cotton, woolen, and silk industries, 1907 to 1913.
Bul. 151. Wages and hours of labor in the iron and steel industry in the United States, 1907 to 1912.
* Bul. 153. Wages and hours of labor in the lumber, millwork, and furniture industries, 1907 to 1913.
Bul. 154. Wages and hours of labor in the boot and shoe and hosiery and underwear industries, 1907 to 1913.
Bul. 160. Hours, earnings, and conditions of labor of women in Indiana mercantile establishments and garment factories.
Bul. 161. Wages and hours of labor in the clothing and cigar industries, 1911 to 1913.
Bul. 163. Wages and hours of labor in the building and repairing of steam railroad cars, 1907 to 1913.
Bul. 168. Wages and hours of labor in the iron and steel industry, 1907 to 1918.
Bul. 171. Union scale of wages and hours of labor, May 1, 1914.
Bul. 177. Wages and hours of labor in the hosiery and underwear industry, 1907 to 1914.
* Bul. 178. Wages and hours of labor in the boot and shoe industry, 1907 to 1914.
Bul. 187. Wages and hours of labor in the men's clothing industry, 1911 to 1914.
* Bul. 190. Wages and hours of labor in the cotton, woolen, and silk industries, 1907 to 1914.
* Bul. 194. Union scale of wages and hours of labor, May 1, 1915.
Bul. 204. Street railway employment in the United States.
Bul. 214. Union scale of wages and hours of labor, May 15, 1916.
Bul. 218. Wages and hours of labor in the iron and steel industry, 1907 to 1915.
Bul. 221. Hours, fatigue, and health in British munition factories.
Bul. 225. Wages and hours of labor in the lumber, millwork, and furniture industries, 1915.
Bul. 232. Wages and hours of labor in the boot and shoe industry, 1907 to 1916.
Bul. 238. Wages and hours of labor in woolen and worsted goods manufacturing, 1916.
Bul. 239. Wages and hours of labor in cotton goods manufacturing and finishing, 1916.
Bul. 245. Union scale of wages and hours of labor, May 15, 1917.
Bul. 252. Wages and hours of labor in the slaughtering and meat-packing industry.
Bul. 259. Union scale of wages and hours of labor, May 15, 1918.
Bul. 260. Wages and hours of labor in the boot and shoe industry, 1907 to 1918.
Bul. 261. Wages and hours of labor in woolen and worsted goods manufacturing, 1918.
Bul. 262. Wages and hours of labor in cotton goods manufacturing and finishing, 1918.
Bul. 265. Industrial survey in selected industries in the United States, 1919. Preliminary report. [In press.]
Bul. 274. Union scale of wages and hours of labor, May 15, 1919. [In press.]

Employment and Unemployment.

* Bul. 109. Statistics of unemployment and the work of employment offices.
Bul. 116. Hours, earnings, and duration of employment of wage-earning women in selected industries in the District of Columbia.
Bul. 172. Unemployment in New York City, N. Y.
Bul. 182. Unemployment among women in department and other retail stores of Boston, Mass.
Bul. 183. Regularity of employment in the women's ready-to-wear garment industries.
Bul. 192. Proceedings of the American Association of Public Employment Offices.
* Bul. 195. Unemployment in the United States.
Bul. 196. Proceedings of the Employment Managers' Conference held at Minneapolis, January, 1916.
Bul. 202. Proceedings of the conference of the Employment Managers' Association of Boston, Mass., held May 10, 1916.
Bul. 206. The British system of labor exchanges.
Bul. 220. Proceedings of the Fourth Annual Meeting of the American Association of Public Employment Offices, Buffalo, N. Y., July 20 and 21, 1916.
Bul. 223. Employment of women and juveniles in Great Britain during the war.
* Bul. 227. Proceedings of the Employment Managers' Conference, Philadelphia, Pa., April 2 and 3, 1917.
Bul. 235. Employment system of the Lake Carriers' Association.
Bul. 241. Public employment offices in the United States.
Bul. 247. Proceedings of the Employment Managers' Conference, Rochester, N. Y., May 9–11, 1918.

Women in Industry.

Bul. 116. Hours, earnings, and duration of employment of wage-earning women in selected industries in the District of Columbia.
* Bul. 117. Prohibition of night work of young persons.
Bul. 118. Ten-hour maximum working-day for women and young persons.
Bul. 119. Working hours of women in the pea canneries of Wisconsin.
* Bul. 122. Employment of women in power laundries in Milwaukee.
Bul. 160. Hours, earnings, and conditions of labor of women in Indiana mercantile establishments and garment factories.
* Bul. 167. Minimum-wage legislation in the United States and foreign countries.
* Bul. 175. Summary of the report on condition of woman and child wage earners in the United States.
Bul. 176. Effect of minimum-wage determination in Oregon.
Bul. 180. The boot and shoe industry in Massachusetts as a vocation for women.
Bul. 182. Unemployment among women in department and other retail stores of Boston, Mass.
Bul. 193. Dressmaking as a trade for women in Massachusetts.
Bul. 215. Industrial experience of trade-school girls in Massachusetts.
Bul. 217. Effect of workmen's compensation laws in diminishing the necessity of industrial employment of women and children.
Bul. 223. Employment of women and juveniles in Great Britain during the war.
Bul. 253. Women in the lead industry.

Workmen's Insurance and Compensation (including laws relating thereto).

Bul. 101. Care of tuberculous wage earners in Germany.
Bul. 102. British National Insurance Act, 1911.
Bul. 103. Sickness and accident insurance law of Switzerland.
Bul. 107. Law relating to insurance of salaried employees in Germany.
* Bul. 126. Workmen's compensation laws of the United States and foreign countries.
Bul. 155. Compensation for accidents to employees of the United States.
* Bul. 185. Compensation legislation of 1914 and 1915.
Bul. 203. Workmen's compensation laws of the United States and foreign countries.
Bul. 210. Proceedings of the Third Annual Meeting of the International Association of Industrial Accident Boards and Commissions.
Bul. 212. Proceedings of the conference on social insurance called by the International Association of Industrial Accident Boards and Commissions.
Bul. 217. Effect of workmen's compensation laws in diminishing the necessity of industrial employment of women and children.
Bul. 240. Comparison of workmen's compensation laws of the United States.
Bul. 243. Workmen's compensation legislation in the United States and foreign countries.
Bul. 248. Proceedings of the Fourth Annual Meeting of the International Association of Industrial Accident Boards and Commissions.
Bul. 264. Proceedings of the Fifth Annual Meeting of the International Association of Industrial Accident Boards and Commissions.
Bul. 272. Workmen's compensation legislation of the United States and Canada, 1919. [In press.]
Bul. 273. Proceedings of the Sixth Annual Meeting of the International Association of Industrial Accident Boards and Commissions. [In press.]
Bul. 275. Comparison of workmen's compensation laws of the United States and Canada. [In press.]

Industrial Accidents and Hygiene.

Bul. 104. Lead poisoning in potteries, tile works, and porcelain enameled sanitary ware factories.
Bul. 120. Hygiene of the painters' trade.
* Bul. 127. Dangers to workers from dusts and fumes, and methods of protection.
Bul. 141. Lead poisoning in the smelting and refining of lead.
* Bul. 157. Industrial accident statistics.
Bul. 165. Lead poisoning in the manufacture of storage batteries.
* Bul. 179. Industrial poisons used in the rubber industry.
Bul. 188. Report of British departmental committee on the danger in the use of lead in the painting of buildings.
* Bul. 201. Report of committee on statistics and compensation insurance cost of the International Association of Industrial Accident Boards and Commissions. [Limited edition.]
Bul. 205. Anthrax as an occupational disease.
Bul. 207. Causes of death by occupation.
Bul. 209. Hygiene of the printing trades.
Bul. 216. Accidents and accident prevention in machine building.
Bul. 219. Industrial poisons used or produced in the manufacture of explosives.

Industrial Accidents and Hygiene—Concluded.

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Bul. 230. Industrial efficiency and fatigue in British munition factories.
Bul. 231. Mortality from respiratory diseases in dusty trades.
Bul. 234. Safety movement in the iron and steel industry, 1907 to 1917.
Bul. 236. Effect of the air hammer on the hands of stonecutters.
Bul. 251. Preventable death in the cotton manufacturing industry.
Bul. 253. Women in the lead industry.
Bul. 256. Accidents and accident prevention in machine building. Revision of Bul. 216.
Bul. 267. Anthrax as an occupational disease. (Revised.) [In press.]
Bul. 276. Standardization of industrial accident statistics. [In press.]

Conciliation and Arbitration (including strikes and lockouts).

* Bul. 124. Conciliation and arbitration in the building trades of Greater New York.
Bul. 133. Report of the industrial council of the British Board of Trade on its inquiry into industrial agreements.
Bul. 139. Michigan copper district strike.
Bul. 144. Industrial court of the cloak, suit, and skirt industry of New York City.
Bul. 145. Conciliation, arbitration, and sanitation in the dress and waist industry of New York City.
* Bul. 191. Collective bargaining in the anthracite coal industry.
Bul. 198. Collective agreements in the men's clothing industry.
Bul. 233. Operation of the Industrial Disputes Investigation Act of Canada.

Labor Laws of the United States (including decisions of courts relating to labor).

* Bul. 111. Labor legislation of 1912.
* Bul. 112. Decisions of courts and opinions affecting labor, 1912.
* Bul. 148. Labor laws of the United States, with decisions of courts relating thereto.
Bul. 152. Decisions of courts and opinions affecting labor, 1913.
* Bul. 166. Labor legislation of 1914.
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Bul. 211. Labor laws and their administration in the Pacific States.
* Bul. 213. Labor legislation of 1916.
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Bul. 229. Wage-payment legislation in the United States.
Bul. 244. Labor legislation of 1917.
Bul. 246. Decisions of courts affecting labor, 1917.
Bul. 257. Labor legislation of 1918.
Bul. 258. Decisions of courts and opinions affecting labor, 1918. [In press.]

Foreign Labor Laws.

Bul. 142. Administration of labor laws and factory inspection in certain European countries.

Vocational Education.

Bul. 145. Conciliation, arbitration, and sanitation in the dress and waist industry of New York City.
Bul. 147. Wages and regularity of employment in the cloak, suit, and skirt industry.
* Bul. 159. Short-unit courses for wage earners, and a factory school experiment.
Bul. 162. Vocational education survey of Richmond, Va.
Bul. 199. Vocational education survey of Minneapolis.
Bul. 271. Adult working-class education in Great Britain and the United States. [In press.]

Labor as Affected by the War.

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Bul. 222. Welfare work in British munition factories.
Bul. 223. Employment of women and juveniles in Great Britain during the war.
Bul. 230. Industrial efficiency and fatigue in British munition factories.
Bul. 237. Industrial unrest in Great Britain.
Bul. 249. Industrial health and efficiency. Final report of British Health of Munition Workers Committee.
Bul. 255. Joint industrial councils in Great Britain.

Miscellaneous Series.

* Bul. 117. Prohibition of night work of young persons.
Bul. 118. Ten-hour maximum working day for women and young persons.
* Bul. 123. Employers' welfare work.
Bul. 158. Government aid to home owning and housing of working people in foreign countries.
* Bul. 159. Short-unit courses for wage earners, and a factory school experiment.
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Bul. 174. Subject index of the publications of the United States Bureau of Labor Statistics up to May 1, 1915.
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Bul. 242. Food situation in Central Europe, 1917.
Bul. 250. Welfare work for employees in industrial establishments in the United States.
Bul. 254. International labor legislation and the society of nations.
Bul. 263. Housing by employers in the United States. [In press.]
Bul. 268. Historical survey of international action affecting labor. [In press.]

SPECIAL PUBLICATIONS ISSUED BY THE BUREAU OF LABOR STATISTICS.

Descriptions of occupations, prepared for the United States Employment Service, 1918–19.

Boots and shoes, harness and saddlery, and tanning.
Cane-sugar refining and flour milling.
Coal and water gas, paint and varnish, paper, printing trades, and rubber goods.
Electrical manufacturing, distribution, and maintenance.
Logging camps and sawmills.
Medicinal manufacturing.
Metal working, building and general construction, railroad transportation, and shipbuilding.
Mines and mining.
Office employees.
Slaughtering and meat packing.
Street railways.
Textiles and clothing.
Water transportation.

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ROYAL MEEKER, Commissioner

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IMPORTANT NOTICE.

It is highly important at all times that Government publications be issued only to those who can make use of them. The existing shortage of paper and the high cost of printing supplies and labor make it all the more necessary to exercise economy in printing and distributing Government literature. It has therefore been decided to put the MONTHLY LABOR REVIEW issued by the Bureau of Labor Statistics of the United States Department of Labor on a subscription basis, beginning with July 1, 1920. One free subscription will be given to all labor departments and bureaus, workmen's compensation commissions, and other offices connected with the administration of labor laws and organizations exchanging publications with the Bureau of Labor Statistics. To all others the subscription price will be $1.50 per annum, and the price for extra copies, 15 cents per copy. All those not on the free list who desire to receive the MONTHLY LABOR REVIEW after July 1, 1920, should write without delay to the Superintendent of Documents, Government Printing Office, Washington, D. C., inclosing remittance in cash, post-office order, express money order, or check.

NOTE.

The Index to Volume IX of the MONTHLY LABOR REVIEW (July to December, 1919) will soon be ready for distribution and a copy will be forwarded to anyone making application for it.

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